

OM nucleic - nucleic search, using sw model

Run on: March 9, 2010, 15:51:16 ; Search time 1 Seconds  
 (without alignments)  
 1134.946 Million cell

updates/sec

Title: US-10-572-905-2  
 Perfect score: 4751  
 Sequence: 1 ggcacgagcgcgagttcctgtc.....taaaaaaaaaaaaaaaaaaaaaa 783

Scoring table: BLOSUM62  
 Gapop 10.0 , Gapext 0.5

Searched: 417 seqs, 79705 residues

Total number of hits satisfying chosen parameters: 834

Minimum DB seq length: 0  
 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
 Maximum Match 100%  
 Listing first 45 summaries

Database : 7335755.seq:\*

Pred. No. is the number of results predicted by chance to have a  
 score greater than or equal to the score of the result being  
 printed,  
 and is derived by analysis of the total score distribution.

# SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
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1	2120.5	44.6	2120	1	US-10-478-914-64	Sequence 64,
Appl						
2	2106	44.3	3210	1	US-10-478-914-4	Sequence 4,
Appli						
3	2098.5	44.2	2437	1	US-10-478-914-61	Sequence 61,
Appl						
c						
4	2041	43.0	3210	1	US-10-478-914-4	Sequence 4,
Appli						
c						
5	2024.5	42.6	2120	1	US-10-478-914-64	Sequence 64,
Appl						
6	2015	42.4	2198	1	US-10-478-914-17	Sequence 17,
Appl						
c						
7	2013.5	42.4	2437	1	US-10-478-914-61	Sequence 61,
Appl						
8	1995.5	42.0	3589	1	US-10-478-914-21	Sequence 21,
Appl						

c	9	1983.5	41.7	2083	1	US-10-478-914-3	Sequence 3,
Appli							
c	10	1980	41.7	2198	1	US-10-478-914-17	Sequence 17,
Appl							
	11	1979	41.7	1946	1	US-10-478-914-62	Sequence 62,
Appl							
c	12	1943	40.9	2022	1	US-10-478-914-60	Sequence 60,
Appl							
	13	1930.5	40.6	2495	1	US-10-478-914-20	Sequence 20,
Appl							
c	14	1925.5	40.5	2495	1	US-10-478-914-20	Sequence 20,
Appl							
	15	1921	40.4	2336	1	US-10-478-914-57	Sequence 57,
Appl							
c	16	1893.5	39.9	2336	1	US-10-478-914-57	Sequence 57,
Appl							
	17	1887.5	39.7	2083	1	US-10-478-914-3	Sequence 3,
Appli							
c	18	1870.5	39.4	3589	1	US-10-478-914-21	Sequence 21,
Appl							
c	19	1848	38.9	1813	1	US-10-478-914-63	Sequence 63,
Appl							
	20	1845	38.8	1813	1	US-10-478-914-63	Sequence 63,
Appl							
c	21	1826.5	38.4	1946	1	US-10-478-914-62	Sequence 62,
Appl							
c	22	1796	37.8	820	1	US-10-478-914-39	Sequence 39,
Appl							
	23	1795	37.8	867	1	US-10-478-914-6	Sequence 6,
Appli							
	24	1792	37.7	889	1	US-10-478-914-5	Sequence 5,
Appli							
	25	1791	37.7	816	1	US-10-478-914-15	Sequence 15,
Appl							
c	26	1785	37.6	811	1	US-10-478-914-37	Sequence 37,
Appl							
c	27	1781	37.5	816	1	US-10-478-914-15	Sequence 15,
Appl							
	28	1781	37.5	2022	1	US-10-478-914-60	Sequence 60,
Appl							
c	29	1770	37.3	867	1	US-10-478-914-6	Sequence 6,
Appli							
	30	1759.5	37.0	794	1	US-10-478-914-13	Sequence 13,
Appl							
c	31	1755.5	37.0	938	1	US-10-478-914-69	Sequence 69,
Appl							
	32	1745.5	36.7	839	1	US-10-478-914-16	Sequence 16,
Appl							
	33	1740	36.6	717	1	US-10-478-914-42	Sequence 42,
Appl							
c	34	1736	36.5	889	1	US-10-478-914-5	Sequence 5,
Appli							
	35	1735	36.5	938	1	US-10-478-914-69	Sequence 69,
Appl							
c	36	1729	36.4	839	1	US-10-478-914-16	Sequence 16,
Appl							
c	37	1724	36.3	778	1	US-10-478-914-35	Sequence 35,
Appl							
	38	1715.5	36.1	909	1	US-10-478-914-66	Sequence 66,
Appl							

c	39	1708	36.0	909	1	US-10-478-914-67	Sequence 67,
Appl							
	40	1701.5	35.8	1020	1	US-10-478-914-68	Sequence 68,
Appl							
c	41	1696	35.7	889	1	US-10-478-914-9	Sequence 9,
Appli							
c	42	1695.5	35.7	794	1	US-10-478-914-13	Sequence 13,
Appl							
c	43	1686	35.5	788	1	US-10-478-914-54	Sequence 54,
Appl							
	44	1678	35.3	889	1	US-10-478-914-9	Sequence 9,
Appli							
c	45	1671.5	35.2	845	1	US-10-478-914-18	Sequence 18,
Appl							

# ALIGNMENTS

## RESULT 1

US-10-478-914-64

```
; Sequence 64, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 64
; LENGTH: 2120
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-64
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Query Match          44.6%;  Score 2120.5;  DB 1;  Length 2120;
Best Local Similarity 36.4%;  Pred. No. 3.7e-115;
Matches 514;  Conservative 0;  Mismatches 264;  Indels 635;
Gaps 73;
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```
Qy          1 GGCACGAGCG-----AGTTCCTGTCTC---TCTGCCAACGCC-----
GCCCCG----- 40
                ||| ||  ||          || |||| | |          ||  ||||          |||||
Db          83
GGCGCGGACGTGCCCGGTGCCTGGCGCGTGGTAGCAGGCGCCCGGTGCCCCGGCCGGCGCA 142

Qy          41 -----ATGGCTTCCC-----AAAACC-----GCGACCCAGCCG-----
CCACTAGCGT 78
                ||||| | |          || |||          |||  ||||| |          || |
|
Db          143 AGACCATGGCGTTTCATGGTGAAGACCATGGTGGGCGG-
CCAGCTGAAGAACCTCACTGGG 201
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Qy          79 CGCC-----GCCGCCCCG--TAAAGGAGCTG-----AGCCGAG---
CGGGG- 113
      |||      || || | ||| |||| ||      ||||| |
|||
Db          202
AGCCTGGGAGGCGGCGAGGATAAGGGAGATGGGGACAAGTCGGCAGCCGAAGCTCAGGGC 261

Qy          114 --GCGCCGCCCGGGGTCCGGTGGGCAAAAG--GCTAC-----
AGCAGGAGC-T 156
      | ||||      || || || | | | || || ||      || ||||
Db          262
ATGAGCCGGGAGGAGTACGAGGAGTATCAGAAGCAACTCGTGGAAGAGAAGATGGAGCGG 321

Qy          157 GATGACC----CTCATGATGTCTGGCGATAAAGGGATTTCTGC-----
CTTCC----C 201
      |||| | | || | |||      ||      ||||      |||||
|
Db          322
GATGCACAGTTACACAGAGGAAGGCAGAGCGGGCCACACTGCGGAGCCACTTCCGAGAC 381

Qy          202 TGAATCAGACAACCTTTTCAAATG---GGTAGGGACC--
ATCCA----- 240
      | | | | |||      | | | | | || |||||
Db          382
AAATACCGGCTACCCAAGAACGAGACAGATGAGAGCCAGATCCAGATGGCAGGTGGAGAC 441

Qy          241 -TGGAGC-----AGCTGGAACAGTATAT----GAAGAC-
CTGAGGTATAAG----- 280
      |||||      ||||| || || || ||| | |||| | |
Db          442
GTGGAGCTGCCCCGGGAGCTGGCCAAGATGATCGAGGAGGACACAGAGGAGGAGGAGGAG 501

Qy          281 -----CTC--TC-----GCTAGAGTTCC-----CCAGTGGCT-
ACCCTT 311
      ||| ||      || || ||||      || | |||| || |
Db          502 AAGGCCTCAGTCCTTGGGCAGCTGGCCAGCCTTCCTGGCTTGAACCTG-
GGCTCACTCAA 560

Qy          312 --ACAATGCGC---CCACAGTGAAGTTCTCTACGCC--CTGC-----
TATACCCCAA 357
      |||| || | |||| || | |||| || | ||      | ||||
||
Db          561
GGACAAGGCCAGGCCACACTGGGGGATCTCAAGCAATCAGCTGAGAAGTGTACGTCAT 620

Qy          358 CGTGGACA----CCCAGGGTAACATAT--GCCTGGACATCC-TGAAGGAAAAGTG---
GT 407
      ||| ||      ||| |||| || | | |||| | || |||| || ||| |
||
Db          621 -
GTGACCACTTCCCCGGGGTTACCCACTGGGCTGGGCCCCCATGAGGGCTAAGAGTGTGT 679

Qy          408 C-----TGCCCTGT-
ATGATGTC 424
      |
      ||||| | | |
|
Db          680
CAACTTCCAGGGACCCATACTCCATTGGGGCTTTTGTTCCTTGCCCCATCCTAGTTCC 739

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Qy          425 AGGACCATTCGTCTCCAT--CCAGAGCCTT-----
CTAGGA 460
      | | | | | | | | | | | | | | | | | | | | | | | |
| | |
Db          740 AAGACCTTTC--
CCATCCATGCCCCAAGCCTATCTTCTGGTTTCTTCTCTCCGCTGGGA 797

Qy          461 GAA-----CCCAACATTGATAGTCCCTTGA-----ACACACATGCT--GCC-----
GAG 502
      | | | | | | | | | | | | | | | | | | | | | | | |
| | |
Db          798
GTAAAGTCCCCATCTTCACTCTACCCTTCAGGACCCTCCCCACCAGCTCAGCCTGTGGAG 857

Qy          503 --CTC-----TGGAAAAACCCACAGCTTTTAAAG-----
AAGTACCTGCA 540
      | | | | | | | | | | | | | | | | | | | | | | | |
| | | | |
Db          858
GCCTCCCAAGATTGTAGGAATAGGCCCATCCCTCTCTGGCCATGGCCCCAAGTTCCTGCA 917

Qy          541 ---AGAAACCTACTCAAAG-----CAGGTCACC-----
AGCC 569
      | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          918
CACAGGAGCACCCACAGAGACACACACAGGACACAAAACCCCTGGCACGTTTCAGAGAC 977

Qy          570 AGGAGCC-CTGAC----CCAGGC-----
TGC 590
      | | | | | | | | | | | | | | | | | | | | | | | |
| |
Db          978
AGAAGCCACAGACACATCCCGGCACAGACAGACACACACGAGGCCAGCTCCCTTGCCTGT 1037

Qy          591
CCAGCCTGTCCT----- 602
      | | | | | | | | | | | | | | | | | | | | | | | |
Db          1038
CCAGCCCCCTCCAGACACCACCACTCAGAACTCTGAGAGAGAGCATGGGCAGACACCCTC 1097

Qy          603 -----TGTGT-----
CGTCTTTTAAATTTT----- 623
      | | | | | | | | | | | | | | | | | | | | | | | |
Db          1098
AGCAGACAGGAGGCCTGAGTTCCAGTCTCCACCTTTATTGTTCTTGAAAGCCCCTGCTCT 1157

Qy          624 -----CCTTAGAT-----GGTCTGTCCT-----TTTTGTG---
AT 650
      | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1158
CTCTGAGCCTTATTTTCATCATCTGTAAATGGGAATGTCCTGAATGACTTCTAAGGCTCT 1217

Qy          651 TTCTGTATAGGACT-----CTTTAT-----
CTTGAG----- 676
      | | | | | | | | | | | | | | | | | | | | | | | |
Db          1218
TTCTGGCTTGAACCTGTCAGAGCCAAGCCACATCCCTCCTTGGGCAGGGCAGCAGCTGCT 1277

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Qy          677 -----CTGTGGTATTT-----
TTGTTTTGTTTT 700
                               |||||  | |
Db          1278
GCCACAGCCTCCAGCGGCTGCCACTGTGGGCTCTGGGAGCCGGAGCGATGCTGTGTGAGA 1337

Qy          701 GTCT-----TTTAAATTAA-----
GCCTCGGTTGAG 726
                | |                      | | | |||          |||||  ||
|
Db          1338
GGCAGAGTGCCAAGGATGAAGCTGGCACTGAACAGTAAGCGGCTCCAGGCCTCCTCTGGG 1397

Qy          727 CCCTTG-----TATATTAAATAAATG-----
CATTTTTG 755
                |||  |                  | | ||  |  ||          |||
||
Db          1398
CCCAGGGCCCAGCCAATTTCTGTTCTGTTCTGTAGAACGCTCTCTGGATTCCATAGCTG 1457

Qy          756 -----TCCTTTTTTAAAAAAAAAAAAAAAAAAAA 783
                ||||  | |||  |  |||||  ||||
Db          1458 GAATCTCCTCTCTTAGCTCAGTGAAAATAAAA 1490

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RESULT 2

```

US-10-478-914-4
; Sequence 4, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 4
; LENGTH: 3210
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-4

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Query Match          44.3%; Score 2106; DB 1; Length 3210;
Best Local Similarity 36.8%; Pred. No. 3.6e-113;
Matches 478; Conservative 0; Mismatches 290; Indels 530;
Gaps 63;

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```

Qy          1 GGCACGAGCG-----AGTTCCTGTCTCTCTGCCAAC-----
GCCGCCCCGATG 43
                |||  |  ||          |||||  |  ||  ||  |          |||  || ||
||
Db          680
GGCCCATCCGCAACCTCACGTTCCAGGACCTTCACCTGCACCATGGAGGCCACCAGGCTG 739

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Qy          44 GCTTCCCAAAACCGCGACCCAGC-----CGCCTACTAGC----GTC-
GCCGCCGCCCGTAAA 94      |   |   |   ||   ||||   ||       ||||||   ||       |||   |||   |||   ||
|
Db          740 CCAACAC-
CAGCCACGACCTGGCTCAGCGCCACGGGCTGGAGTCGGCCTCCGACCACCAT 798

Qy          95 GG-----AGCTGAGCC-----
GAGCGG----- 111      ||               |   |||   ||           |||||
Db          799
GGCAAATTCTCCATCACCATGCGCAACCTGACCCTGCTGGATAGCGGCCTCTACTGTCTGC 858

Qy         112 -----GGGCGCCGCC-----CGGGGTCCGGTGGGCAAAAG-
GTA 145              |||   ||   ||                |   |||||   |   ||   |   |
|||
Db          859
CTGGTGGTGGAGATCAGGCACCACTCGGAGCACAGGGTCCATGGTGCCATGGAGCTG 918

Qy         146 CAG-----CAGGAGCTGATG-ACCCTC-----ATGATGT-----
CTG 176             |||        ||||    ||||   |||   ||           ||   |||
|
Db          919
CAGGTGCAGACAGGCAAAGATGCACCATCCAACCTGTGTGGTGTACCCATCCTCCTCCCAG 978

Qy         177 GCGA-----
TAAAGGGATTCTG----- 194      |   ||                   |   |||   |   ||||
Db          979
GAGAGTGAAAGTAAGGGACCAACCTCTTGCCCCCTTTGGGTCTCTGTCTTTCTTCTGTCC 1038

Qy         195 ----CCT-----TCCCTG-----
AATCAGA--- 210            |||          |||||                               |||||
Db         1039
TCATCCTGCACCCAGACCCTGTTTGGAACTCTGGCCTCATCACCCCAAGCCCTCAGAACC 1098

Qy         211 -----CAACCTTTTCAAATG-GGTAGGGAC-----
CATCCATGGAGCAG-- 248                  |   ||||||   ||   |   |       |   |||   |||   |||
Db        1099
CCCCGGTCTCTCTCTTTCTGCTGTCTGCACATCCCTTCTGCTTCCTCCTTGGTGCAATC 1158

Qy         249 --CTGGAACAGTATATGAAGAC-----CTGAGGTATAAGCT-----
CTCGCTAGA 291              |   |   |   |   |   |   |||   ||   |   |||           |||   ||
||
Db        1159
CCCAGAAGCCCACTCTCCTTCCATCTGCTCTGGAGTCTCTGCTCCTCTTGA CTCTCTGGA 1218

Qy         292 -----GTTCC-----CCAGTGGCTA---C-----CCT-----
TACAATGC 318                 ||   ||                ||   ||||   |   |       |||           |||
|
Db        1219
GTGGCTGTGCCTTGGCAGTGACCTTTGGCCAGGGCAAGTGCCCTCATGACAGGTACTGGGT 1278

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Qy 319 GCCC---  
ACAGTGAAGTTCCTCAGCCCTGCTATCACCC----- 354  
|||| ||| |||| || | | || | | |||

Db 1279  
GCCCCAGGCAGCTAAGTGCCGCCCTGCCCACCAGCCCCCTATGGCTTGGAAGGCTGGGG 1338

Qy 355 --CAACGTGGACACCCAGG-GTAAC-----  
ATATGCCTGGA 387  
| | ||| || | || | ||| || |||

||  
Db 1339  
GTCCTCTTGGCCAACAGGGTGAAACCCCATCTCTACTAAAAACACAAAATTAGCCAGG- 1397

Qy 388 CAT-----CCTGAAGG-----  
AAAAGTGGTCTG----- 410  
||| |||| || ||| || |||

Db 1398 CATGGTGGTGCGCGCCTGTAGTCCCAGCTACTCAAGAGG-  
CTGAGGCAAGAGAATCGCTT 1456

Qy 411 ---CCC---TGTATGATGT-----CAGGA-----  
CCATTCTGCTCTCCATCC--- 446  
||| || |||| | || ||| |||| |||| ||

Db 1457 GAACCCGGGAGTCAGAGGTTGCAGTGAGCCGAGATCGCGCCA--  
CTGCACTCCAGCCTGC 1514

Qy 447 ----AGAG-----CCTTCTAGGAGAACCCAACATTGATAGTCCCTTGAA-----  
CAC 489  
|||| || ||| | || |||| | | ||| | |

||  
Db 1515  
TGATAGAGCAAGACTCCATCTCAAAAAAACAACCCAAAATTTGCCTGGCATGGTGGCAG 1574

Qy 490 ACATGCTG---CCGAGCT-----CTGAAAAACCCACAGCTTTT-----  
AA 528  
||| ||| || |||| ||| | | | ||||

|  
Db 1575 GCAT-  
CTGTAATCCAGCTACTCGGGAGGCTGAGACATGAGAGCTGCTTGAACCTGGGAG 1633

Qy 529 GAAGTACCTGCAAGAAACCTA---CTCAAAGCAGGTCACCAGCCAG-----  
GAG 574  
| || | |||| | || | || | | |||| |

|||  
Db 1634  
GCAGAAGTTGCAGTGAGCCGAGATCACACCACTGCACTCCAGCCTGGGTGACAGAGCGAG 1693

Qy 575 CC-CTGACCCAG-----  
GCTGC 590  
| ||| |||| |

|||  
Db 1694  
ACTCTGTCCCAAAAATCAAAAAATCACTTTTGGTAGAGATGCACTCTCGCTATGTTGC 1753

Qy 591 CCAGCCTGTCCTTGTG-TC---GTCTTTTAAATTTTCTTAGATGGTCTGTCCT---  
TT 643  
|||| ||| |||| || | || | | |||| || | |||

|  
Db 1754 CCAGGCTGGTCTTGAACCTCCTGGGCTCAATTGATCTTCCACCTTGACC--  
TCCAAAGTG 1811

```

Qy          1  GGCAC--GAGCGAGTT----CCTGTCTCTCT-----GCCAACGCCGCC--
GGAT 42      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          321 GTCACCTGCGAGAGTTCGAGCCCGACGCAATTGGTGGTGGAGCCAA-
GCAGCCCAAGGCA 379
Qy          43  G-----GCTTCC-----CAAAACCGCG-----
ACC-----C 63
|           | | | | | | | | | | | | | | | | | |
Db          380
GTGTTTGTGCTGAGCTGCCTGCTGAAAGGCCGGACCGTGGAGATCCTACGGGACATCATC 439

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Qy          64 AGCCGC---CACTAGC-----GTCGC-----
CGCCGCCCCGTAAA 94
      |||||  |||||  |  |||  |||  |||  |||
Db          440
TGCCGCAGTCACTTCCAGTATTGTGTGGTGGTCACAACCGTGAGCCACGCTGTCCACCTC 499

Qy          95 GGAGCTGA-----GCCGAGCGGGGGCGCCGCCCGGGGT-----
CCGGTGGGC 136
      |||||  |  ||  |||||  |||  ||  |||  |  |||||

|
Db          500
ACAGCTAATCATGTCCCAGCGGGCGGCAGCGGCCGAGATGGAGGGGCAGCAGCCGGTGTTC 559

Qy          137 AAAAGGCTACAGCAGGAGCT-----GATGACCCTCATGATGT---
CTGGCGA----- 180
      |  |||  ||  ||  ||||  ||||  |  |||||  |  |  |||

Db          560
GAGCAGCTGGAGGAGAAGCTGTGTGAATGGATGGGCAACATGAACTACACGGCCGAGGTG 619

Qy          181 -----TAAAGGGATTTC-TGC-----CTTCCC-----
TGAATCAGAC----- 211
      |  |  |||  |  |||  |||||  |||||  |||  ||  |

Db          620
TTCCATGTCCCGTTATTGCTTGCCCCCTGTTGCTCCCCACTTTGCCTTGACTCCAGCTTTT 679

Qy          212 ---AACCTTTT-CAAAATG-----GGTAGGGACCATCC---ATGGAG--
CAGCTGGAA 254
      |||||  |  |  ||  ||  |  |  |||  ||  |  |  |

|||
Db          680
GCATCCCTTTTCCCACTGCTACCCCAGGATGTGCACCTCCTTAATAGCGCCCGACCGGAC 739

Qy          255 CAGTATATGAAG-----ACCTGAGGTATAAG--CTCTCGCTA-
GAGTTCCTCCCACTG----- 302
      ||  |  |  |  ||||  |  ||  |  |||  |  |||  |  |||||  |

Db          740 AAGAGGAAGCTGGGAAGCCTGGGTGATGTGGACTC-
CACTACGCTAACCCCAAGAGCTGCT 798

Qy          303 GCTACCCTTACAATGC-----GCC-----
CACAGTG----- 328
      |||  |  |  ||||  |||  |  |||

Db          799
GCTGCAGATCAGATGCCTAGTGTGTCAGGCCTCAGTTCTCTGTGTGAACATTTAGGAGTACG 858

Qy          329 -----AAGTTCCTCACGCC-----CTGC-
TATC----- 350
      |  |||||  |  |  ||||  |||

Db          859
GGAGGAGTGTGTTTGTGTAGGTTTCCTTAAGTCAGGTCATCGCTGCGGATCTGGCCAATTA 918

Qy          351 -ACCCCAAC-----
GTGGA 363
      ||||  |

|||||
Db          919
TGCCCCCTGCAAAGAACAGGAAGAAGACTGCTGCAGGCAGGGCATCAGTGGTTTTTTGTGGA 978

Qy          364 C---ACCCAGGGTAACATA--TGCC--TGGACATCCTGAAG-----
GAAAAG-- 403
      |  ||||  ||  |  ||  |  ||  |||||  |||  ||  |||||  |||  |||

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Db 979  
 CAGAACCCTGGATCTCACAGGAGCAGTTGGACATCATGGAGACAACTTAGTAGAGAAGAT 1038

Qy 404 -----  
 TGGT----- 407

Db 1039  
 CATTTTCAGCACTTCCCCAGCTCCCAGGCCACACAAATGATGTGATGGTTAACATGATAGC 1098

Qy 408 -----CTGCCCT-----GTATGATGT-----  
 CAGG----- 427

Db 1099  
 GCTCACTGCACTCCATACTGAGGAGGAAAATTATAATGTGGTTGCACCAGGCTGTCTTTC 1158

Qy 428 ACCATTCTG---CTCTCCATCCAGAGCCTTCTAGGA-----  
 GAACCCAA----- 468

Db 1159  
 ACAATTCACTGACACCACAGCCAAAGCCCTATGGGAAGCTTTACTGAACACTAAGCACAA 1218

Qy 469 -----CATTGATAG-----TCCCTTGAACAC-ACATG-----  
 CTGCC 499

Db 1219  
 AGAGGCAGTGATGGAAGTTCGGAGACATCTAGTGGAAGCGGCAAGCAGAGAAAACCTGCC 1278

Qy 500 GAGC-----TCTG---GAAAAACCCC---ACAGCT--TTTAAGAAGTAC---  
 CTG 538

Db 1279  
 AATCAAGATGAGTATGGGGAGAGTCACACCGGGACAGCTCATGTCCTATATTCACTCTT 1338

Qy 539 CAAGAAACCTACTCAAAGC-----AGG---TCACCAGCCAGGA---  
 GCCC 577

Db 1339 CAAG-  
 AACAACTCAAAGCTCTAATGAATCATTGTGGCCTCCTCCAGCTTGGACTGGCCA 1397

Qy 578 TGACCCAGGC--TG-----CCCAGCCTGTCCTTGT--  
 GTCGTCTTTTTAATTTTT--- 623

Db 1398 CAGCTCAAACGTTGAAACACCCACAGACTG-  
 CCAAGTGGGACAACCTTTCTGGCTTTTGAA 1456

Qy 624 -----CCTTAGATGGTC-----  
 TGTCCTTTTTG----- 646

Db 1457  
 AGGCTCCTTCTTCAGAGCATTGGGGAGTCAGCAATGTCCGTTGTGTTAAATCAGCTGCTG 1516

Qy 647 ----TGATTT---CTGTAT-----AGGACTCTTTATCT--TGAGCTG-  
 TG 681

Db 1517  
 CCCATGATTAAGCCTGTAACCCAGAGAACCAACGAGGACTACAGCCCTGAGGAACTGCTG 1576

Qy 682 GTATTTTGTGTTTGTGTTTGTCTTTTAAAT--TAAGC-CTCGGTTG----  
AGCCCT---- 730

Db 1577  
ATCCTTCTCATATATATTTATTCTGTCTACTGGAGAGCTCACGGTAGACAAAGACCTGTGT 1636

Qy 731 -----TGTATATTAAATAAATGCATT-----  
TTTG 755

Db 1637  
GAAGCAGAAGAAAAAGTCAAGAAAGCATTGGCTCAGGTCTTCTGTGAGGAATCTGGATTG 1696

Qy 756 T--CCTTTTTTAAAAAAAAAAAAAAAA 779  
Db 1697 TCACCTTTGCTGCAAAAATTACGGA 1722

#### RESULT 4

US-10-478-914-4/c  
; Sequence 4, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 4  
; LENGTH: 3210  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-4

Query Match 43.0%; Score 2041; DB 1; Length 3210;  
Best Local Similarity 35.1%; Pred. No. 4.5e-109;  
Matches 508; Conservative 0; Mismatches 249; Indels 692;  
Gaps 82;

Qy 2 GCACGAGCGAGTTCTGTCTCTCTGCCAACGC---CGCCCGGAT---GGC--  
TTCCCAA 53  
Db 1502 GCAGTGGCGCGATCTCGGCTCACTGCAACCTCTGACTCCCGGGTTCAAGCGATTCTC-  
TT 1444

Qy 54 ACCGCGACC-----CAGCCG---CCACTAGCGT-CGCCGCC--  
GCC----- 88  
Db 1443  
GCCTCAGCCTCTTGAGTAGCTGGGACTACAGGCGCGCACCACCATGCCTGGCTAATTTTT 1384



Qy 89 -----CGTAAAGGAG-----CTG--  
AGCCGAGCGGGGCGCCGCC----- 121  
||| || | ||| ||| ||| | | |||

Db 1383  
GTGTTTTTTAGTAGAGATGGGGTTTCACCCTGTTGGCCAAGAGGACCCCCAGCCTTCCCAA 1324

Qy 122 -----CGGGGTCCGGTGGGCAAAGGCTAC----AGCAGGAGCTGATG-  
ACCC----- 164  
|||| | ||||| | ||| | ||| | |||

Db 1323 GCCATAGGGGCTGGTGGGC--AGGGCGGCACTTAGCTG--  
CCTGGGGCACCCAGTACCT 1268

Qy 165 -TCATGATG-TCTGGC----GATAAAGGGATTTCTGCCTT--CCCTGAATC-----  
AG 209  
||||| | ||| | |||| | |||| | | | |

||  
Db 1267 GTCATGAGGCACTTGCCCTGGCCAAAGG--  
TCACTGCCAAGGCACAGCCACTCCAGAGAG 1210

Qy 210 ACAA-----CCTTTTCAAATGGGTAG-----GGAC-----  
CATC 238  
||| || ||||| | || | ||

|  
Db 1209  
TCAAGAGGAGCAGAGACTCCAGAGCAGATGGAAGGAGAGTGGGCTTCTGGGGATTGCA-C 1151

Qy 239 CATGG----AGCA-----GCTGGAACAGTAT---ATGAAGACCTGAGG--  
TATAA 279  
|| || |||| || | ||| | || |||| | || | |

|  
Db 1150  
CAAGGAGGAAGCAGAAGGGATGTGCAGCAGCAGAAAAGGAGGAGGACCGGGGGTTCTGA 1091

Qy 280 GCTCTC-----  
GCTAGAGTTC----- 295  
| || || |||||

Db 1090  
GGGCTTGGGGTGATGAGGCCAGAGTTCCAAACAGGGTCTGGGTGCAGGATGAGGACAGAA 1031

Qy 296 -----CCC---AGTGGCTA-----  
CCCTTAC----- 313  
||| || ||| | |||||

Db 1030  
GAAAACAGAGAACCCAAAAGGGGCAAGAGGTTGGTCCCTTACTTTCACTCTCCTGGGAGG 971

Qy 314 -----AATGCGCC-CACAG-----  
TGAAGTTCCT 336  
| | || |||| | || |

|||  
Db 970  
AGGATGGGTACACCACACAGTTGGATGGTGCATCTTTGCCTGTCTGCACCTGCAGCTCCA 911

Qy 337 ---CAC-----GCCCTG-----CT-ATCACCCCAAC-----  
GT 360  
||| |||| || ||| || | ||

||  
Db 910  
TGGCACCATGGACCCTGTGCTCCGAGTGGTGGTGCCTGATCTCCACCACCAGGCAGCAGT 851

Qy 361 GGACACC-----CAGGGTAA-----CAT-----ATGCC-----

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TGGA 387
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|||
Db 850
AGAGGCCGCTATCCAGCAGGGTCAGGTTGCGCATGGTGATGGAGAAGTTGCCATGGTGGT 791

Qy 388 C-----ATCC-----
TGAAGGAAAAAGT 404
| ||| || |

||
Db 790
CGGAGGCCGACTCCAGCCCGTGGCGCTGAGCCAGGTCGTGGCTGGTGTGGCAGCCTGGT 731

Qy 405 GGTCTGC-----CCTGTAT-----GATG-----
TCAG 426
|| || | |||| | |||| ||

|
Db 730
GGCCTCCATGGTGCAGGTGAAGGTCCTGGAACGTGAGGTTGCGGATGGGCCGGCGCTCTG 671

Qy 427 GACCATTCTGCTCTCCATCC--AGAGC-----
CTTCTAGGAGAACCCAACAT 471
| |||| | | || |||| || || | || |

|
Db 670
AGCAGGTCTGCACCTCGCCCCCTCGAGCTGCGGTACCACGTCTTGTAGAAGGTCACATCGT 611

Qy 472 TGATAGTCCCTTGAACACA-----CATG---CTGCCG-----
AGCTCTGGAAAAA 513
| || ||| |||| || | |||| | ||||

Db 610 -----
GCCCTTTGTCCACAGGGCCCAAGAGCCTGCAGGTGAGGGTGACGTTCTG----- 562

Qy 514 CCCCACAG-----CTTTTAAGAAGTAC-----CTG-
CAAGAAACC 547
|||| | | | | |||| |||| ||

|||
Db 561
CCCCTCGGGACAGACATACAGGGAATACGGCGTGCGACCTTGAAGGCTGCCACCGGACC 502

Qy 548 TACTCAAAG-----CAGGTCACCAGCCAG-----GAGC-----CCTG----
ACCCA 584
| |||| || | ||||| | | | ||| ||||

||||
Db 501
TGCTCAGAGAGAGGAGAGCCCTGTACCTGACTGATCCAGTGCTACTCCTGGCAACCCCA 442

Qy 585 G-----GCTGCCCAGC-----
CT 597
| || |||||

||
Db 441
GAGCGGGGAAGAACCTTAGCCTCTGCTACTTCCCAGCCACAGGCCAGGGGCATGTCAGCT 382

Qy 598 GTCCT---TGTGTC-GTCTTTTAAATTT-----
TTCCTTAGATG--- 632
| || | | | |||| |||| |||| | ||

Db 381
GACCTCCCTAAGACTGCCTTCTGCATTTGTTTCACAAACCCCACTCCATCCTAGGCTGTTG 322

```



Qy 1 GGCAC-----  
 GAGCGAGTTCCTGTCTCTCTGCCAAC----- 31  
 ||| | ||| | || ||| | ||| |  
 Db 1399 GGCCAGAGGAGGCTGGAGCCGCTTACTGT-  
 TCAGTGCCAGCTTCATCCTTGGCACTCT 1341

Qy 32 GCCGCCCGGATGGCTTC---CCAAAACCGCGA-CCCA-----  
 GCCGCCACTAGCGTC--- 79  
 ||| | | ||| | || | ||| | ||| | | | |  
 Db 1340  
 GCCTCTCACACAGCATCGCTCCGGCTCCCAGAGCCACAGTGGCAGCCGCTGGAGGCTGT 1281

Qy 80 -----GCCGCC--GCCCGTAAAG-----GAGCTGAGC-----  
 CGAGC-- 109  
 || ||| ||| | | | ||| | |||

Db 1280  
 GGCAGCAGCTGCTGCCCTGCCCAAGGAGGGATGTGGGCTTGGCTCTGACAGTTCAAGCCA 1221

Qy 110 GGGGGCGCC-----GCC---CGGGG---TCC-----GGTG--  
 GGCAAAAGGCT-- 144  
 | | ||| | | ||| ||| | | ||| |  
 Db 1220  
 GAAAGAGCCTTAGAAGTCATTTCAGGACATTCCCATTTTACAGATGATGAAATAAGGCTCA 1161

Qy 145 ---ACAGCAGGAGC-----TGATGAC----  
 CCTCATGATGTCTGGCG 179  
 | ||||| || || ||| |||| | |||  
 |  
 Db 1160  
 GAGAGAGCAGGGGCTTTCAAGAACAATAAAGGTGGAGACTGGAACCTCAGGCCTCCTGTCT 1101

Qy 180 ATAAAGGGATTTCTGCC--TTCCCTGAATCAGACAACCT-----  
 TTTCAAATGGGT 228  
 |||| | ||||| | || |||| | ||  
 |||

Db 1100 GCTGAGGG-  
 TGTCTGCCCATGCTCTCTCTCAGAGTTTCTGAGTGGTGGTGTCTGGAGGGG 1042

Qy 229 AGGGACCATCCATGGAGC-----  
 AGCTGGAA----- 254  
 |||| | ||||| || |||

Db 1041  
 CTGGACACGCAAGGGAGCTGGCCTCGTGTGTGTCTGTCTGTGCCGGGATGTGTCTGTGGC 982

Qy 255 --CAGTATATGAA--GACCTGAGGTATAAGCTCTCGCTAGAGTTCCCCAGTGGCTAC-  
 CC 309  
 | || | ||| || | ||| | || | ||| | ||| | |  
 ||

Db 981  
 TTCTGTCTCTGAACGTGCCAGGGGTTTTGTGTCCTGTGTGTGTCTCTCTGTGGGTGCTCC 922

Qy 310 T---TACA-----ATGCGCCCA---CAGTGAAG-----  
 TTCCT----- 336  
 | | || || | ||| ||| || | ||||

Db 921  
 TGTGTGCAGGAACCTTGGGGCCATGGCCAGAGAGGGATGGGCCTATTCTTACAATCTTGGG 862

Qy 337 -----CAC-----GCCCTG-----  
 CT 347  
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||
Db 861
AGGCCCTCCACAGGCTGAGCTGGTGGGGAGGGTCTCTGAAGGGTAGAGTGAAGATGGGGACT 802

Qy 348 ATCACCCCAACGTGGA-----CACCCAGGGTAACATATGCCT-
GGACATCCTGAAGGAAA 401
| | ||| | | | | | | | | | | | | | | | |
||
Db 801 TTACTCCCAGCGGAGAGGAAGAAACCAG---AAGATAGGCTTGGGGCAT--
GGATGGGAA 747

Qy 402 AGTGGTCT-----GCCCTGTATGATGTCAGG--
ACC 430
| | ||| | | | | | | | | | | | | | |
||
Db 746 A--
GGTCTTGGAAGTCTAGGATGGGGCAAGGGAAACAAAGCCCCAAATGGAGTATGGGTCCC 689

Qy 431 ATTCTGCTCTC-CATCCAGAGCCTTCTAGGAGAACCCAAC---
ATTGATAGTCCC----- 481
| | | | | | | | | | | | | | | | | |
Db 688 TGGAAGTTGACACACTCTTAGCCCTCATGG-
GGCCCCAGCCCAGTGGGTAACCCCGGGGA 630

Qy 482 -TTGAACAC---ACATG---CTGCCGAGCT-----CTGGAAAAACCCCA---
CAGCTTTT 526
| | | | | | | | | | | | | | | | | |
Db 629
AGTGGTCACATGACGTGACACTTCTCAGCTGATTGCTTGAGATCCCCCAGTGTGGCCTGG 570

Qy 527 AAGAAGTACCTGCAAGAAACCT-ACTCAAAGCAGGTC-ACCAGCCAGGAGCCCT--
GACC 582
| | | | | | | | | | | | | | | | | |
|||
Db 569
GCCTTGTCCTTGAGTGAGCCAGGTTCAAGCCAGGAAGGCTGGCCAGCTGCCCAAGGACT 510

Qy 583 CAGG-CTGCCCAGCCT-GTCCT-TGTGTCTGCTTT--TTTAATTTTTCTTAGAT----
GG 633
| | | | | | | | | | | | | | | | | |
||
Db 509 GAGGCCCTTCTCCTCCTCCTCCTCTGTGTCTCCTCGATCATCTTGGCC--
AGCTCCCGGG 452

Qy 634 TCTG-TC-----CTTTTGTGATTTCTGTATAGGACTC---
TTTATCTTGAGCTGTGGTA 684
| | | | | | | | | | | | | | | | | |
||||
Db 451
GCAGCTCCACGTCTCCACCTGCCATCTGGATCTGGCTCTCATCTGTCTCGTTCTTGGGTA 392

Qy 685 -----
TTTTTGTGTTTTGTTTTGTCTTTTAAATTAAGCCTCGGTTGAGCCCTTGTATATTA 739
| | ||| | | | | | | | | | | | | | |
Db 391 GCCGGTATTTGTCTCGGAAGTGGCTCCGCAGTGTGGCC-C-
GCTCTGCCTTCTCTGTGT 334

Qy 740 AATAAATGCATTTTTGTCTT-----TTTTAAAAAAAAAAAAAAAAAAAAA 783
| | ||| | | | | | | | | | | | | | |
Db 333 GAACTGTGCATCCCCTCCATCTTCTCTTCCACGAGTTGCTTCTGATA 286

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RESULT 6

US-10-478-914-17

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; Sequence 17, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 17
; LENGTH: 2198
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-17
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Query Match          42.4%; Score 2015; DB 1; Length 2198;
Best Local Similarity 37.3%; Pred. No. 2.1e-108;
Matches 529; Conservative 0; Mismatches 236; Indels 652;
Gaps 83;
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```
Qy      2 GCACGAGC---GAGTTCCTGTCTCTCTGCCAACGCC---GCCCCG-----
GATGGCTTCC 49
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```
Db      765 GAACGTGCTAAGCGTACC---
CTCTCTTCCAGCACCCAGGCCAGTATTGAGATCGATTCT 821
```

```
Qy      50 C-----AAAACCGCGACCCAGCCGCCACTAGCGTCGCCGCCGCCCG--
TAAAGGAG 98
          | || | | | || || || | || | || || || | || |
```

```
Db      822 CTCTATGAAGGAATCGACTTCTATACCTCCATTA---C-CCG-
TGCCCCGATTGAAGAA 875
```

```
Qy      99 CTGA--GCCGAGCGGGGGCGC--CGCCCGGGGTCCGGTGGGCAAAGGCTAC-
AGCAG-- 151
          |||| || || | | || | || || || || | || | || | || |
```

```
Db      876
CTGAATGCTGACCTGTTCCGTGGCACCCCTGGACCCAGTAGAGAAAGCCCTTCGAGATGCC 935
```

```
Qy      152 GAGCTG---ATGACCC---TCATGATGTCTGGCGATAAAGGGATTTCTGC---
CTTCC 200
          | || | || || | || || || || || | || | || || |
```

```
Db      936 AAACCTAGACAAGTCACAGATTCATGATAT-
TGTCCTGGTTGGTGGTTCTACTCGTATCCC 994
```

```
Qy      201 C-TGAATCAGA-----CAAC----CTTTTCAAATGGGTAGGGAC-----
CAT 237
```

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      | | | | | | | | | | | | | | | | | |
||
Db          995
CAAGATTCAGAAGCTTCTCCAAGACTTCTTCAATGGAAAAGAACTGAATAAGAGCATCAA 1054

Qy          238 CC-----ATGGAGCAGCTG---GAACAG-----
TATATGAAGAC-- 268
      || | | | | | | | | | | | | | | | |
Db          1055
CCCTGATGAAGCTGTTGCTTATGGTGCAGCTGTCCAGGCAGCCATCTTGTCTGGAGACAA 1114

Qy          269 --CTGAG---GTATAA-----GCTC-----
TCGCTAGAGTTCCCC----- 298
      | | | | | | | | | | | | | | | |
Db          1115
GTCTGAGAATGTTCAAGATTTGCTGCTCTTGGATGTCACTCCTCTTTCCCTTGGTATTGA 1174

Qy          299 -----AGTGG-----CTACCCTTACAATGCG-----
CCCACAGTGAA 330
      | | | | | | | | | | | | | | | |
|
Db          1175
AACTGCTGGTGGAGTCATGACTGTCCTCATCAAGCGTAATACCACCATTCTTACCAAGCA 1234

Qy          331 GT-----TCC-TCACGCCCTG--CTATCACCCCAAC--
GTGGAC----- 364
      | | | | | | | | | | | | | | | |
Db          1235
GACACAGACCTTCACTACCTATTCTGACAACCAGCCTGGTGTGCTTATTTCAGGTTTATGA 1294

Qy          365 -----ACCCAGGGTAACAT-
ATGCCTGG----- 386
      | | | | | | | | | | | | | |
Db          1295
AGGCGAGCGTGCCATGACAAAGGATAACAACCTGCTTGGCAAGTTTGAAGTCACAGGCAT 1354

Qy          387 ACATCCTGAAGGAAAAGTGGTCTGCC-CTGTATGATGTC-----
AGGACCAT 432
      | | | | | | | | | | | | | | | |
||
Db          1355 ACCTCCTGCA--
CCCCGAGGTGTTTCTCAGATTGAAGTCACTTTTGACATTGATGCCAAT 1412

Qy          433 -----TCTGC-----
TC 439
      | | | | |

||
Db          1413
GGTATACTCAATGTCTCTGCTGTGGACAAGAGTACGGGAAAAGAGAACAAGATTACTATC 1472

Qy          440 TCCA---TCCAGAGCCTT-----CTAGGA-----GAAC-----
CCA----- 467
      | | | | | | | | | | | | | | | |
Db          1473
ACTAATGACAAGGGCCGTTTGAGCAAGGAAGACATTGAACGTATGGTCCAGGAAGCTGAG 1532

Qy          468 ----ACATTGAT-----AGTC--
CCTTGAACACACATG-- 494
      | | | | | | | | | | | | | | | |
Db          1533

```

AAGTACAAAGCTGAAGATGAGAAGCAGAGGGACAAGGTGTCATCCAAGAATTCAC TTGAG 1592

Qy 495 ----CTGCC-----GAGC-TCTG-----GAAAAACCCACAGC---  
TTT TA- 527  
|  
| | | | | | | | | | | | | |  
|  
Db 1593  
TCCTATGCCTTCAACATGAAAGCAACTGTTGAAGATGAGAACTTCAAGGCAAGATTAAC 1652

Qy 528 -----AGAAGTACCTG-----  
CAAG 542  
| | | | | | | |  
| | |  
Db 1653  
GATGAGGACAAACAGAAGATTCTGGACAAGTGTAATGAAATTATCAACTGGCTTGATAAG 1712

Qy 543 AAACCTACT-CAAAGCAGG-----TCACCAGC-----  
CAGGAG----- 574  
| | | | | | | | | | | | | |  
Db 1713  
AATCAGACTGCTGAGAAGGAAGAATTTGAACATCAACAGAAAGAGCTGGAGAAAGTTTGC 1772

Qy 575 -----CC---CTGACCCAGGCTGC-----CCA-----  
GCCTG-- 598  
| | | | | | | | | | | | | |  
Db 1773  
AACCCCATCATCACCAAGCTGTACCAGAGTG CAGGAGGCATGCCAGGAGGAATGCCTGGG 1832

Qy 599 -----TCCTTGTG-----TCGTCTTTT---  
TAATTTTTCCTTAGATGGTCTGTCTTT 643  
| | | | | | | | | | | | | |  
| |  
Db 1833 GGATTTCCTGGTGGTGGAGCTCCTCCCTCTGGTGGTGCTTCCTCAG--  
GGCCCACCATTG 1890

Qy 644 TTGTGATTTCT-----GTATAGG-----ACTCTTT---  
ATC--T 672  
| | | | | | | | | | | | | |  
|  
Db 1891  
AAGAGGTTGATTAAGCCAACCAAGTGTAGATGTAGCATTGTTCCACACATTTAAACATT 1950

Qy 673 TGAG-----CTGTGGTATTTTT-----GTTT---  
TGTTTTTGT 702  
| | | | | | | | | | | | | |  
| |  
Db 1951  
TGAAGGACCTAAATTCGTAGCAAATTCTGTGGCAGTTTTTAAAAAGTTAAGCTGCTATAGT 2010

Qy 703 -----CTTTTAAATTAAGC-----  
CTCGGTTGA----- 725  
| | | | | | | | | | | | | |  
Db 2011  
AAGTTACTGGGCATTCTCAATACTTGAATATGGAACATATGCACAGGGGAAGGAAATAAC 2070

Qy 726 ---GCCCT-----TGTATATTAAAT---AAATGCATTTTTTGTGCT-----  
CT 759  
| | | | | | | | | | | | | |  
| |  
Db 2071 ATTGCACTTTATAAACACTGTATTGTAAGTGGAATGCA---





TGCAACCACATTATAATTTTCCTCCTCAGTATGGAGTGCAGTGAGCGCTATCATGTTAAC 1085  
 Qy 145 ----ACAGCA-----GGAGCTG-----  
 ATGACC----- 163  
 ||| || ||||| |||||  
 Db 1084  
 CATCACATCATTTGTGTGGCCTGGGAGCTGGGGAAGTGCTGAAATGATCTTCTCTACTAA 1025  
 Qy 164 -----CT-CATGATGTCTGGC-----  
 GATAAAGGGATTT----- 191  
 || ||||| || |||||  
 Db 1024  
 GTTGTCTCCATGATGTCCAACCTGCTCCTGTGAGATCCAGGGTTCTGTCCACAAAACCAC 965  
 Qy 192 --CTGCCTTCCCTGAATCAG---ACAACCTTTTCAAATGGGTAGGGACCAT-----  
 CCAT 241  
 |||| | |||| | || | |||| | |||||  
 |||  
 Db 964 TGATGCCCTGCCTGCAGCAGTCTTCTTCCTGTTC---  
 TTTGCAGGGGCATAATTGGCCA- 909  
 Qy 242 GGAGCAGCTG----GAACAGTATATGAAGACCTGAGGTATAA----GCTCTCG-----  
 CT 288  
 || | || | || | || |||| | || |||||  
 ||  
 Db 908 -  
 GATCCGCAGCGATGACCTGACTTAAGGAACCTACAGCAAAACACTCCTCCCGTACTCCT 850  
 Qy 289 AGA-GTTC-CCCAGTG-GCTAC--CCTTACAAT--  
 GCGCC----- 321  
 | | |||| | || | || |||| | || |  
 Db 849  
 AAATGTTACACAGAGAACTGAGGCCTGACACTAGGCATCTGATCTGCAGCAGCAGCTCT 790  
 Qy 322 -----CACAGTGAAGTTC----CTCACG-----CCCTGCTATCAC----  
 CCCAAC-- 358  
 | |||| || | | | |||| | | || |  
 Db 789  
 GGGGTTAGCGTAGTGGAGTCCACATCACCCAGGCTTCCAGCTTCTTGTCCGGTCGG 730  
 Qy 359 -----GTGGACA-CCCAGGGTAACA-----TATGC-----  
 CTGGA 387  
 |||| |||| || ||||| || ||||  
 |||||  
 Db 729  
 GCGCTATTAAGGAGGTGCACATCCTGGGGTAGCAGTGGGAAAAGGGATGCAAAAGCTGGA 670  
 Qy 388 CATCCTGAAGGAAAAGTGG-----  
 TC 408  
 || |||| |||||  
 ||  
 Db 669 -GTC---  
 AAGGCAAAGTGGGGAGCAACAGGGGCAAGCAATAACGGGACATGGAACACCTC 614  
 Qy 409 TGCCCTGT-----ATGATGTCAGGACCATT----CTGC-  
 TCTCCATCCAG----- 448  
 ||| ||| ||| || | |||| | || ||||| |||||  
 Db 613 GGCCGTGTAGTTTCATGTTGCC-ATCCATTACACAGCTTCTCC-  
 TCCAGCTGCTCGAAC 556

```

Qy          449 -----AGCCTTCTAGG----AGAACCC-----
AACATTGATAG----- 477
                                     || ||| ||      |  ||      ||||  |||
Db          555
ACCGGCTGCTGCCCCCTCCATCTCGGCCGCTGCCGCCGCTGGGACATGATTAGCTGTGAGG 496

Qy          478 -----TCCC--TTG-----AACACACA-----
TGCTGCCGA-- 501
                                     || |  |||      | |||||      ||| || |
Db          495
TGGACAGCGTGGCTCACGGTTGTGACCACCACACAATACTGGAAGTGACTGCGGCAGATG 436

Qy          502 --GCTCTGAAAAACCCCA-----CAGCTTTTAAGAAG-----
TAC- 535
          |  |  |  |  |  |||      |  ||  |||  ||  ||
|
Db          435
ATGTCCTCGTAGGATCTCCACGGTCCGGCCTTTTCAGCAGGCAGCTCAGCACAAACACTGCC 376

Qy          536 -----CTGCAAGAAACCTACTCAAA-----
GCAGGTCACCAGCC 569
          ||||  |  ||  |  |||      |||||  |  |||
|
Db          375 TTGGGCTGCTTGGCTCCACCACCAATTGCGTCGGGCTCGAACTCTCGCAGGTGA-
CAGTC 317

Qy          570 AGGAGCCCTGAC-----CCAG-----GCTGCC-----
CAGCCTGTC--- 600
          |||  |||  ||      ||||      || |||      ||| || ||
Db          316
AGGGCCCCCACCAGCTCCAGGAGACGGGTGGATCCGCAGCCCCAGTGCAGGCTCTCGGC 257

Qy          601 -CTTGTGTCGTCTTTTTTAA-----TTTTTCCTTAGATGG--TCTG-----
TCC 640
          |  |  |  ||||      |||      |||  |  ||  |  |  |||
|||
Db          256
GCAGGCGGCGTCCAGGTAAACCACAGCCCGTTTCACTTTGGCCAGCACCTGCTCCCATCC 197

Qy          641 TTTTGTG---ATTCTGTAT-----AGG-ACTCTTTAT-----
CTTGAG- 676
          ||  ||  |  |  |  |||      |||  |||  |  |      ||||
|
Db          196
TTGCTGGGTAAAGGACAGTACGCCCAGGCGCTCATGGTTGGGGATTTCGCAGACTTGGA 137

Qy          677 --CTGTGGT-----ATTTTTGTTTTGTTTTGTCTTTT----
AAATTAAGCCTCGG---- 721
          ||  |||      |  ||  ||  |  |  |  ||  ||  |||
Db          136
AACTACGGTGCAGGAACCTTCTTTCAGAACTCACCGCTTCCGGAAATTGGGCTCCGGGAGA 77

Qy          722 --TTGA-----GCCCTTGTATATTAAATA-----AATGC-----
ATTTTTGTCTTT 761
          ||||      ||  |||  |  |  ||      |  ||      |  ||  |  |
|
Db          76 CTTTGACAGTCTCCACAGTACACCCAGTAGGCCAACAGTGCTCGAGGAATTCCG-
CAGCT 18

Qy          762 TTTAAAAAAAAAAAAAAAAA 777

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Db                   |||| | | || ||  
17 TTTAGAGCAGAAGTAA 2

RESULT 8

US-10-478-914-21  
; Sequence 21, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 21  
; LENGTH: 3589  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-21

Query Match                   42.0%; Score 1995.5; DB 1; Length 3589;  
Best Local Similarity       41.4%; Pred. No. 6.5e-106;  
Matches 501; Conservative    0; Mismatches 263; Indels 445;  
Gaps 74;

Qy                   2 GCACG-AGCGA---GTTCC---TGT-CTCTCTGCC--AAC--  
GCCGCCCGGATGGCTTCC 49  
                  ||||   ||||   | |||   ||| | | ||| |   |   |||| || ||  
|||||  
Db                   25  
GCACACTGCGAGGGGCTCCGTGTGTGCGCCCTGTCTTGTCTGGCCGTCCTCATCCCTTCC 84

Qy                   50 CAAACCGCGACCCAGCCGCCACTAGCGTCGCCGCCGCCCGTAAAGGAGCT-----  
GAG 103  
                  |    || |   ||| ||||| || | ||||   |||   ||||   |||  
||  
Db                   85 C----CCAC-CCCCTGCCGCGGCTC-CGAC-CCGCT-CCC--  
AAAGTGGCTTCACAATAG 134

Qy                   104 CCG-----AGCGG---GGGCGCCGCCCGGGGTCCG---GTGGGCAA----  
AAGG----- 142  
                  ||           ||||   ||| ||| |   ||||   |   || |   ||||  
Db                   135  
TCGGTCTCTCGGCGGTGTAGGCTGCGCACCAGGTCCACACTTAAGCGAAATCAAGGAGACC 194

Qy                   143 -----CTACAGC-----  
AGGAGCTGATGACCCTCATG---- 169  
                  |||| |                   | |||| ||   ||||  
Db                   195  
CCCTTCTACTTCTACCTTTGGGTTTGGTGCTCAATGCGAAGCTGCTGCAACTCAGACACG 254

Qy                   170 ---ATGTC-----TGGCGATAAAGG-----GATTT-----CTGCCTTC---

CCT 202

||

Db 255

CCTAAGTCAACTCATGCAGAAAAAGGAGAAAAAGTTTTGGTATACAAATGCTCTCAGTCCA 314

Qy 203 GAATCAGACAACCTTTTCAAATGGGT-----

AGGGACC---A 236

|

Db 315 GC--CAGAC-

ACCAAGCCGAAAGGTTGTGCTGGCTGCAACCGAAAGATCAAGGACCGGTA 371

Qy 237 TC--CATGGAGCAGCTGGAACAGTA----TATGAAGA--CCTGAGGTAT-----

AA 279

|| | ||| |||| | || ||||| |||| | |

Db 372 TCTTCTAAAGGCA-

CTGGACAAATACTGGCATGAAGACTGCCTGAAGTGTGCCTGCTGTG 430

Qy 280 GCTCTCGCTAGAG-----TTC-CCCAGT-----GGCTACCCTTA--

CAATG-C 318

|

Db 431

ACTGTCTGCTTGGGGGAGGTGGGCTCCACCCTGTACACTAAAGCTAATCTTATCCTTTGTC 490

Qy 319 GCC-----CACAGTGAAGTTCC---TCAC-GCCCTGCT-----

ATCA 351

|| | | | | | | | | |

|||

Db 491

GCAGAGACTATCTGAGGCTCTTTGGTGTAACGGGAAACTGCGCTGCCTGTAGTAAGCTCA 550

Qy 352 CCCC AAC-----GTGGACA-----CCCAGGGTAACATAT---GCCTGGAC-----

AT 390

||| | ||| | || ||| || | | |||||

Db 551

TCCCTGCCTTTGAGATGGTGATGCGTGCCAAGGACAATGTTTACCACCTGGACTGCTTTG 610

Qy 391 CCTGAAGGAAAAGTGGTCTGC-CCTGTATGATGTCAGGACCA--

TTCTGCT----- 438

| || | || || | | || || || || | || | ||

Db 611 CATGTCAGCTTTGTAAATCAGAGATTTTGTGTTG--

GAGACAAATTTTTCCTAAAGAATAA 668

Qy 439 ----CTCCAT--CCAGA--GCCTTCTAGGA-----

GAACCCAA 468

|

Db 669

CATGATCCTTTGCCAGACGGACTACGAGGAAGGTTTAATGAAAGAAGGTTATGCACCCCA 728

Qy 469 CATTGATAGTCCCTTGAACA----CACAT----

GCTGCCGAGCTCTGGA----- 509

|| | | | |||| | || | | |||| | |

Db 729

GGTTTCGCTGATCTATCAACATCACCCCATTAAGAATACAGAGCACTACATTCTTTTATCT 788

Qy 510 --AAAACCCACACA-GCTTTTAAGAAGTACCTGCAAGAAACCTACTCAA-

AGC----- 557

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          | | | | | | | | | | | | | | | | | |
Db      789 TTTTGTCCACATGTACATAAGAATTGAC--
ACAGGAACCTACTGAATAGCGTAGATAT 846

Qy      558 AGGTCACCAG-----
CCAGGAGCCCTGACCCAGGCTG----- 589
          | | | | | | | | | | | | | | | | | |
Db      847
AGGAAGGCAGGATGGTTATATGGAATAAAAGGCGGACTGCATCTGTATGTAGTGAAATTG 906

Qy      590 -CCCAG-----CCTGTCCTTGTGTC--
GTC 611
          | | | | | | | | | | | | | | | | | |
Db      907
CCCCAGTTCAGAGTTGAATGTTTATTATTAAAGAAAAAAGTAATGTACATATGGCTGGAT 966

Qy      612 TTTTAAATTTTTCCTTAGATGGTCTGTCCTTT---
TTGTGATTTCTGTATAGGACTCTT- 667
          | | | | | | | | | | | | | | | | | |
||
Db      967
TTTTTTGCTTGCTATTCGTTTTTGTGTCACTTGGCATGAGATGTTTATTTTGGACTATTG 1026

Qy      668 --TATCTTGAGCTGTGGTAT-----
TTTTGTTTTGTT----- 697
          | | | | | | | | | | | | | | | | | |
Db      1027
TATATAATGTATTGTAATATTTGAAGCACAAATGTAATACAGTTTTTATTGTGTTACCATT 1086

Qy      698 -----TTTG--TCTTTTAAATTAAGCC-
TCGGTTGAGCCCTTGTATAT----- 737
          | | | | | | | | | | | | | | | | | |
Db      1087
TGTGTTCCATTTGCTTCTTTGTATTGTTGCATTTAGTACAATCAGTGTTTAACTTACTG 1146

Qy      738 TAAATAAATGCATT-----TTTGTC--CTTTTTTAAA-----
AAAAAAA 774
          | | | | | | | | | | | | | | | | | |
|||
Db      1147
TATATTTATGCTTTCTGTATTTACCAGCTATTTTAAATGAGCTGTAACCTTTCTAGTAAAG 1206

Qy      775 AAAAAAAAAA 783
          | | | | | | | | | | | | | | | | | |
Db      1207 AATTGAAAA 1215

```

RESULT 9

US-10-478-914-3/c

; Sequence 3, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775



```

Db 1437
CAGCTCTACAACCTTACCAGTATAAAAAATTTGGATCAGTTACTTAATCTTGCAGTTTCTTC 1378

Qy 269 CT-----GAGG-----TATAAGCTCTCGCTAGAGTTCCCCAGT-----
GGCT 305
||
||
Db 1377
CTTTTAAAAATGGAATAATATTATCTATCATATAAAATGCCCAGTTAACAAATATGAACT 1318

Qy 306 -ACCCTTACAATGCGCC---CAC-----AGTG-----AAGTTCC---
TCA 338
||
||
Db 1317
AACACCTACAATGTGCCAGGCACCATTCTAGGGAATAGAATGTAAATAAGTTCAAGTTCT 1258

Qy 339 CGCCCTG-----
CTATCAC----- 352
|
Db 1257
TGACCTGAATAAGTTTACATTTTAGTGAGAAGACAGACAATAAATCAATAACATGTCCAT 1198

Qy 353 -----CCCAACG-----
TGG-- 362
|
Db 1197
TATGCCAGATAGTTTTAAATGTCACAAAGAAAAAGGGGGAGCAATCAGATAGTGATGGAA 1138

Qy 363 ---ACACCC-----AGGG-----
TAACAT----- 378
|
Db 1137
GTTACACTCTAGAGAGGGTGGACAGAAAAAGTTTCTCTTAGGAGATGACATCTGAACAGA 1078

Qy 379 -----ATGCCTGG---ACATCCTGAAGGAAAAGTGGT-----
CTGC- 411
|
||
Db 1077
GATCTAAATGACTGAGTACAAACCCCAATGGAAAAGTGATTGGTGTGTTGTGAAACAGCA 1018

Qy 412 -----CCTGTAT-----GATGTCAGGACCATTCTG-CT-----CT-----
CCATC- 445
|
||
Db 1017
ACACAGCCAGTTTGACTAGATGAGTAGATCAGAATGACTGAGGTGGGACTGTGGTCATCA 958

Qy 446 -----CAGAGCCTT---CTAGGAGAACC-
CAACATTGATAGTCCCTTGAACACAC--- 491
|
Db 957 AAGAGATCAGAGAGGTAGCCTGGGAAGGCCACATCACAGAATGTCCTTTGGGC-
CTCTGT 899

Qy 492 -----ATGCTG---CCGAGC-----
TCTGGAAAAACCC-- 516
|
Db 898
AAGAGCGTTTTGAAAAAACAGTTCTGAGCAAAGGTTAGTCATTTAACTTGACTTACTCTT 839

```



Qy 517 -----CAC---AGCTTTTAAGAAG-TACCTGCAAGAAACCT-----  
 ACT 551  
 ||| ||| || || | | | | ||| |  
 |||  
 Db 838  
 TAGAAGGATCACTTTGGCTATTGAGTGGCAAACAACCTGGAGAAGTGGTTAGGGGAGCACT 779

Qy 552 CAAAGCAGG-----  
 TCACCAGCCAGGAGCCCTGACCCAGGCTGC----- 590  
 ||||| | ||| | ||||| || |||  
 Db 778  
 GTGGGCAGGAATAGAAGGAGGAAAAGCAGACTGGAGCCTAATCCAGTACTTCAGATGAGA 719

Qy 591 -----CCAG-----CCTGTC-----CTTGTGTC-----  
 GTCT 612  
 || | ||| || ||| | | ||  
 |  
 Db 718  
 AATGACAGATTTGCCTGGTACATCATTTTCCTATCCCTTTACTTATAACTTATTGGTGTAT 659

Qy 613 TTTTAATTT-----TTCCTTAGA----TGGTCTGTCC-  
 TT 642  
 ||||| ||| | ||| || ||| ||| |  
 Db 658  
 TTTTATTTTAAAGTGTAATTTTTATAAATGAAGCATAATTTGAAGATTGATATGTTTCGGA 599

Qy 643 TTTGTGATTTCTGT----ATAG-GACTCT-----  
 TTATC----- 671  
 ||||| ||||| | || | |||| || ||  
 Db 598  
 CTTGTGTTTTCTATTATCATGGTGTCTCTCCACATACCTTTTCCCTTTAGTTCTGCTTCT 539

Qy 672 --TTGAGCT-----GTGGTATTTTTGTT-----  
 TTGTTTTTGTCT- 704  
 ||| ||| || ||||| ||||| |||||  
 ||  
 Db 538 TATTGTGCTCCTCAAGT-  
 CTATTTTTGTCTTTTCCCTCTACTTCTACTGTTTTGAACTG 480

Qy 705 -----TTTAAATTAAGCCTCG-  
 GTTGAGCCCTTGTATATTAAAT----- 742  
 ||| ||| ||| | ||| ||||| || ||| |  
 Db 479  
 TATATGCTATTTCTATTTTGCCAGGAGTTACCCCTTCAATTTTCGTTGTACTCTCTCAG 420

Qy 743 ----AAATGCAT-----TTTTGTCCTTTTTTAAAAAAAAAAAAAAAAAAAA  
 782  
 ||| ||| || ||||| || | | | |||  
 Db 419 TCTCAAACACATACCCATGCTCTCTTCTGTCCTTCTCTTCATATCATCTTCTAGAA  
 364

RESULT 10

US-10-478-914-17/c

; Sequence 17, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 17  
; LENGTH: 2198  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-17

Query Match 41.7%; Score 1980; DB 1; Length 2198;  
Best Local Similarity 35.8%; Pred. No. 3.3e-106;  
Matches 498; Conservative 0; Mismatches 281; Indels 614;  
Gaps 69;

Qy 1 GGCACGAGCGAGTT-----CCTGTCTCTCTGC-----  
CAAC----- 31  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1594  
GACTCAAGTGAATTCTTGGATGACACCTTGTCCCTCTGCTTCTCATCTTCAGCTTTGTAC 1535

Qy 32 -----GCCGCCCGG-----ATGGCTTCC-----  
CAAA----- 53  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1534  
TTCTCAGCTTCCTGGACCATACGTTCAATGTCTTCCTTGCTCAAACGGCCCTTGTCATTA 1475

Qy 54 -----ACCG-----CGACC-  
CAGCCG----- 68  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1474  
GTGATAGTAATCTTGTCTCTTTTCCCGTACTCTTGTCCACAGCAGAGACATTGAGTATA 1415

Qy 69 CCACTAGCGTC-----GCC-----GCCGCC-C---  
GTAAAGGAG-- 98  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1414  
CCATTGGCATCAATGTCAAAAGTGACTTCAATCTGAGGAACACCTCGGGGTGCAGGAGGT 1355

Qy 99 ----CTG-----AGCCGAGCGGG-----GGCGC---  
CGCC- 121  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 1354  
ATGCCTGTGAGTTCAAACCTTGCCAAGCAGGTTGTTATCCTTTGTCATGGCACGCTCGCCT 1295

Qy 122 -CGGGGTCCGG--TGGGCAA--AGGCT-----ACAGC--  
AGGAGCTGATGACC-----C 164  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1294  
TCATAAACCTGAATAAGCACACCAGGCTGGTTGTCAGAATAGGTAGTGAAGGTCTGTGTC 1235

Qy 165 T-CATGAT--GTCTGGCGATAAAGGGATTTCT---  
 GCCTTCCCTGAATCAGACAACCTTT 218  
 | | | | | | | | | | | | | | | | | | | | | |

Db 1234  
 TGCTTGGTAGGAATGGTGGTATTACGCTTGATGAGGACAGTCATGACTCCACCAGCAGTT 1175

Qy 219 TCAA----ATGGGTAGGG-----ACCATCCATGGAGCAG-----  
 CTGGAACAGTATATGA 264  
 | | | | | | | | | | | | | | | | | | | | | |

Db 1174 TCAATACCAAGGGAAAGAGGAGTGACATCCA-  
 AGAGCAGCAAATCTTGAACATTCTCAGA 1116

Qy 265 -----AGACCTGAGGTAT-----AAGCT-CTC-----GCTAGAG-  
 TTCCCCAGT 301  
 | | | | | | | | | | | | | | | | | | | | | |

Db 1115  
 CTTGTCTCCAGACAAGATGGCTGCCTGGACAGCTGCACCATAAGCAACAGCTTCATCAGG 1056

Qy 302 G--GCTACCCTTA--CAATGC---GCC-----  
 CACAGTGAAGTTCCTCACGC-- 341  
 | | | | | | | | | | | | | | | | | | | | | |

Db 1055  
 GTTGATGCTCTTATTTCAGTTCTTTTCCATTGAAGAAGTCTTGGAGAAGCTTCTGAATCTT 996

Qy 342 -----CCTGCTATCACC-  
 CCAACGTGGACAC----- 366  
 | | | | | | | | | | | | | | | | | | | | | |

Db 995  
 GGGGATACGAGTAGAACCACCAACCAGGACAATATCATGAATCTGTGACTTGTCTAGTTT 936

Qy 367 -----  
 CCAGGGTAACATATGCCTGGACATC----- 391  
 | | | | | | | | | | | | | | | | | | | | | |

Db 935  
 GGCATCTCGAAGGGCTTTTCTCTACTGGGTCCAGGGTGCCACGGAACAGGTCAGCATTTCAG 876

Qy 392 -----  
 CTGAAGGAAAAGTGGT----- 407  
 | | | | | | | | | | | | | | | | | | | | | |

Db 875  
 TTCTTCAAATCGGGCACGGGTAATGGAGGTATAGAAGTCGATTTCCTTCATAGAGAGAATC 816

Qy 408 -----CTGCCCTGTATGATGTCA-----GGACCATTCTGC-----  
 TCTCCATC--- 445  
 | | | | | | | | | | | | | | | | | | | | | |

Db 815  
 GATCTCAATACTGGCCTGGGTGCTGGAAGAGAGGGTACGCTTAGCACGTTTACAAGCAGT 756

Qy 446 -CAGAGCCTTCTAGGAGAACCC-----AACATTGATAGTCC-----  
 CTTGA 485  
 | | | | | | | | | | | | | | | | | | | | | |

Db 755 ACGGAGGCGTCTTACAGCTCTCTTGTCTCACTGAT-  
 GTCCTTCTTATGCTTGGCGTTAA 697

Qy 486 ACACA-----CATGC---  
 TGCCGAGCTCTGGAAAACC----- 515

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          || ||           || |   || | |   ||       | ||
Db          696
ACTCAGCAATAAAATGGTTGACCATTCGGTTGTCAAATCTTCTCCACCCAAGTGGGTGT 637

Qy          516 CCACAGCTTTTAAGAAGTACCTGCAAGAAACC-TACTCA-----
AAGCAGGTCACCAGC 568
          | |||| | | | |||| ||| || | ||||       | | | |||
Db          636 CTCCAGCTGTAGACTTG-
ACCTCAAAGATTCCATCCTCAATAGTGAGGATTGACACATCA 578

Qy          569 CAGGAGCCCTGACCCAGG-----CTGC-CCAGCC----
TGTCC 601
          | | |||   |||||           |||| ||| ||
||||
Db          577
AAAGTGCCACCTCCCAGGTCAAAGATGAGCACGTTTCTTTCTGCTCCAACCTTTTTGTCT 518

Qy          602 TTG-----
TGTCGTCTTTTAAATTTTC----- 624
          |           || | ||   |||| | ||
Db          517
AAGCCGTAAGCAATAGCAGCAGCAGTTGGCTCATTAAATAATTCTAAGTACATTGAGACCA 458

Qy          625 -----CTTAGATGGTCTGTC-CTTTTGTGATTTCTGTATAG--
GACTC 665
          || | | | || | ||   || |||   ||| || | |
|
Db          457 GCAATAGTTCCAGCATCTTTGGTAGCCTGACGCTGAGAGTCATTAAAGTA-
AGCTGGCAC 399

Qy          666 TTTATCTTGAGCTGTGGTA-----
TTTTTGTTTTGTTTT 699
          | | |   ||| ||||           ||| || |
||
Db          398
TGTGACCACAGCATTGGTAACAGTCTTCCCAAGGTAGGCTTCTGCAATTCCTTCATCTT 339

Qy          700 TGTCT----TTTAAATTAAGCCTC-----
GGTTGAGCCCTTGTATAT 737
          ||||   || | |   ||||           |||   ||||| |||
Db          338
TGTCAGAACCATAGAAGACACCTCCTCTGGATAGAAGCTTTTGGTCTCTCCCTTGTATTC 279

Qy          738 TAAATAAA-----TGCATTTTTGTCC-----
TTTTTTAAAAAA 770
          || | |           |||| || ||           | ||| | |
Db          278
TACTTGACCTTGGGCCTGCCAGCATCATTACCACCATAAAGGGCCAATGTTTCATATC 219

Qy          771 AAAAAAAAAAAAAA 783
          | |   | || |
Db          218 AGACTGGACAACA 206

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RESULT 11
US-10-478-914-62
; Sequence 62, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA

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; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 62  
; LENGTH: 1946  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-62

Query Match 41.7%; Score 1979; DB 1; Length 1946;  
Best Local Similarity 38.5%; Pred. No. 1.9e-106;  
Matches 490; Conservative 0; Mismatches 270; Indels 514;  
Gaps 76;

Qy 3 CAC-----GAGCGAGTT--  
CCTGTCTCTCTGCCAACGCCGCCGATGGCTTCCCAA 53  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 294 CACATCTCTTGGGCCTGTTTACCTG-CGCTC--CCAGAGCCTCC--  
GCCAGCATCCCAGA 348

Qy 54 ACCGCGA--CCCAGC-----CG-----  
CCACTAGCGTCGC 81  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 349  
ATCTCCATCCCCATCTCTCACTTATACACACATCAGTCATCGGTTATCCATTAGCTAAAC 408

Qy 82 CGCCGCCCGTAAAGG-----AGCT-----  
GAGC----- 104  
| | | | | | | | | | | | | | | | | | | | | |  
Db 409  
CGCCTTCCTTAATAGCTTTACACTGTTTGCTTTCTCTGGAACATTTTGTAAATTTTC 468

Qy 105 --CGAGCGGGGGCGCC-----GCCCGG--GG-----  
TCCG-----G 131  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 469  
ATAATGCAGTTGCACACAAATGAAGACACAGATGGCTGCATCCTCCGTCTCTTCCCCTCG 528

Qy 132 TGGGCAAAAGGCTACAG--CAGGAGCTGATG-----ACCCTCATGAT---  
GTCTG-G 177  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 529  
TTTACAGGAAGCTGCGGATCAGGGAGGGGTGTTAGGGTTACCCACATGGTAAGGGCAGAG 588

Qy 178 CGATAAAGGGATTTCTGCCTTCC-----  
CTGA----- 204  
| | | | | | | | | | | | | | | | | | | | | |

Db 589  
ACAAGAGGGGACCCCGATTTTTCATGCTGCACATGGTCATTGCTGGGGACTGAGGTTTGC 648

Qy 205 --ATCAGACAACCTT-----TTCAAATGGGTAGGGACCATCC---ATGGAGC-  
AGCTG 251  
|||| | ||| |||||  
|||||

Db 649 ACATCACCCCTGCCCTGTTCTCCCTCCGCTGGG--  
GAGAAAAGTCAGGGATGGAGCAAGCTG 706

Qy 252 GAACAGTATATGAA-----GACCTGAGGTATAAG-  
CTCTCGCTAGAGTTCC--- 296  
| || | |||| | || | | ||| | || ||| ||

Db 707 CAGCATCTTCTGAAAAAGAAAAGGTGGCCTTGCTCTCCAGGTCTCCC-  
CTCAAGTCCCACC 765

Qy 297 --CCAGTGG----CTACC-CTTACAATG-----CGC--CCAC----  
AGTGAAGTTCC 335  
|| | | ||||| || | | |||| |||

Db 766  
TCCCCATAGTTTTCTGCCACTTCTCTTGATTTTCTCTCTGCCACTTCTCTTGATTTTCC 825

Qy 336 TCAC-GCC-CTGCTAT-----CACCC--CAAC-----GTGG----  
ACACCCAG 370  
|| | ||| || || | | | | ||| | ||

Db 826  
TCTCTGCCACTTCTCTTGATTTTCTCTCTGCAGCTGCTTTGAGGTGGGTTTTCTCCAGA 885

Qy 371 GGTA-ACATATGCCTG-----GAC---ATCCTGAAGGAAAAGTGGTCT---  
GCCCTGTA 417  
| | || | |||| | | || ||| ||| ||| |||

Db 886  
TGCACACTTTCCCTGCTTTGCGTCCTTATTCTGGTAGAAGCACAATCTAAAGCTCATT A 945

Qy 418 TGATGTCAGGACCATTCT-----GCTCTCCATCCAG--AGC-  
CT 453  
| | | |||| | || ||| ||| |||

Db 946  
AGGGAAC TAATCAATTCTGTGCATGGCGCTAGCTCAGCAGATCACCACACAGGCAGCACT 1005

Qy 454 TCTA-----GGAG--AACCCA-----ACATTGATAGT-----CCC---  
TTGA 485  
|| || | ||||| ||| || | ||| |

Db 1006  
ATTAGCAAGTCGGTGCTTAACACATGGCACTTCCATGAATCGATATGGAGCCCGTGTAGA 1065

Qy 486 ACAC-ACATG-----CTGCC-----GAGCT-----  
CTGGAAAAACCCAC 519  
||| |||| |||| | || | |||||

Db 1066  
ACAAGGCATGGGTTTTTTTTCTCTTCCCATTAAGAAAAACTGATGCCAAAAATAACTTCTC 1125

Qy 520 AG-----CTTTTAAGAAG-----  
TACCTGCAAGAAACCTA 549  
|| ||||| |||| | ||||| |||

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|
Db      1126 AGATATTTTCAAGTATGACTTTTATGAAGGGAAAAAGCATTTTGTGTTGCAA-
AATCATG 1184

Qy      550 C-TCAAAGCAGGTCACCAG-----CCAGGAGC-----
CC 577
          | ||| |||| |||| || || ||

|
Db      1185 CTTCAGTGCAGG---
CCAGTTGTGAATTGTGATGGCTTTTATTTCTCCTGGGGCTGTAAC 1241

Qy      578 T-----
GACCCAGGCTGCCCAGCCTGTC----- 600
          | |||| | ||| ||| ||
Db      1242 TTTAAGGGTTTAGAATTTGGAACCA--
CAGCCTAGCTAATCATGACACACACACACAC 1299

Qy      601 -----CTTG-----TGTCGTC-----
TTTT 615
          | || | || |

Db      1300
ACACACATGCACACACATACACATACACAAAGCATCACGAAGAACCATACAAATTGTACA 1359

Qy      616 TAATTTTTC-CTTAGATGGTCTGTCCTTTTTGTGATTTCTGTATAGGACT---
CTTTATC 671
          | |||| | | | | | || | || | | || |

|
Db      1360 TTATTTTACACATGGAGGCTCACTCTAAAAT-
AGATAACATTTTAAATATTAATAAAAC 1418

Qy      672 TTGAGCT-GTGGTATTTT-----
TGTTTTGTTTTGTCTTTTAAATTAAGC 716
          ||| ||| | |||| || || |||| || | ||| || |
Db      1419 TTGTGCTCATTGTATGTTTATTCTATATGTACTGATTTGTTATTACATTT-
CTTTCAA 1477

Qy      717 CTCGGTTG-----
AGCCCTTGTATATTAAATAAATGCATTTTTGTCCTTTTTTAAAAA 769
          ||| | |||| | ||||| | | || |||| |

|||
Db      1478 ATCGTTCAAATTTCTAGCCACATCAATTAAATA-----
TTAATAGTACTTTCTACAAAC 1532

Qy      770 AAAAAAAAAAAAAA 783
          | | | ||||
Db      1533 ATGAGCGCACAAAA 1546

```

# RESULT 12

US-10-478-914-60/c

; Sequence 60, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 60  
; LENGTH: 2022  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-60

Query Match 40.9%; Score 1943; DB 1; Length 2022;  
Best Local Similarity 39.8%; Pred. No. 4.3e-104;  
Matches 487; Conservative 0; Mismatches 271; Indels 466;  
Gaps 68;

Qy 2 GCACGAGCGAGTTCCTGTCTCTCTGCCAACGCCGCC-  
CGGATGGCTTCCCAAACCGCGA 60

Db 1948 GCAATGGCGCGATCTCGGCTCACTGCAACTTCCGCCTC--CTGGGTTC---  
AAGCTATTC 1894

Qy 61 CCCAGCC---GCCACTAGCGTCGCCG-----CCGCC-CGTAAAGGA--GC-  
TGA 102

Db 1893 TCCTGCCTCAGCCTCCTGAGTAGCTGAGGTGAGAGGACTGACGCG-  
AGAGGATTGCTTGA 1835

Qy 103 GCCGAG-----CGGGGGCGCCGC---CCGGGGT----  
CCGGTGGGCAAAGGCT----- 144

Db 1834  
GCCTAGGAGGTTGAGGTTGCAGTGAGCTGTGTTACGCCACTGGACTCCAGGCTGGGTGA 1775

Qy 145 -ACAGCAGGAGCTGATGACCC-----TCATGATGTCTGGCGAT-  
AAAGGGATTTC 192

Db 1774 CAAAGCAAGACC--  
CTGTCTCAAAAACAAAACAAAACAAAACAAAACAAAATAAC 1717

Qy 193 TGCC-----TTCCCTGAAT-----C-----  
AGACAAC----- 214

Db 1716  
CAACAAAAAAACCCTGAGTTTAAGTTTGATTTTAAGACCTGTAGGGACAGCAGATTAGT 1657

Qy 215 -CTTTTCAAATGGGTAGGGACCATC-----  
CATGGAGCA----- 247

Db 1656  
TCTACTTTAATGGGTATGCATCATCTGGAAAGCAAGGGTCATAAAAAGAAGATACATCTT 1597

Qy 248 -GCTGGAACAGT---ATATG----AAGACCTGAGGTATA-----  
AGCTCTCGCT 288

Db 1596





TGTCCT 641  
 || | | | | | | | | | | | | | | | |  
 |||  
 Db 1000 CTTTTCAAGGGCAGCCAACTCTTGAA-----  
 CAGTAGGTGCCAAAATATCCACATGGCCT 946

Qy 642 TTTTGTGATTTT-----TGTATAGGACT--  
 CTT--- 667  
 || | | | | | | | | | | | | | | | |  
 Db 945 TTAT-  
 AGCTTCCACCTGCGTCACACACAAATAACAAAGTAATGTAAATGACATGCTTGAA 887

Qy 668 -  
 TATCTTGAGCTGTGGTATTTTTGTTTTGTTTTGTTCTTTTAAATTAAGCCT----- 718  
 || |||| | | | | | | | | | | | | | | | |  
 Db 886 ATAACCTGT-  
 CAGCAATACTTTGGCTCAATTATATCACTTTAACTTTGCTTGACGCAAT 828

Qy 719 -----CGGTTGAGC-----CCT-----  
 TGTATATTAAATAAATGCATTTTGTG 757  
 | | | | | | | | | | | | | | | | | |  
 ||  
 Db 827 AAAATGTACTACTGGGCAAATTATCTCCAGAACTTTGACTTTAAAAAATG---  
 TTAAATC 771

Qy 758 CTTTTTTAAAAAAAAAAAAAAAAAAAA 781  
 || || | | | | | | | | | | | | | | | |  
 Db 770 AATTATTTCAATATAAATAAATAA 747

# RESULT 13

US-10-478-914-20  
 ; Sequence 20, Application US/10478914  
 ; Patent No. 7335755  
 ; GENERAL INFORMATION:  
 ; APPLICANT: NAKAGAWARA, AKIRA  
 ; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
 ; FILE REFERENCE: 7388-80899  
 ; CURRENT APPLICATION NUMBER: US/10/478,914  
 ; CURRENT FILING DATE: 2003-11-26  
 ; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-162775  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-255226  
 ; PRIOR FILING DATE: 2001-08-24  
 ; NUMBER OF SEQ ID NOS: 417  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 20  
 ; LENGTH: 2495  
 ; TYPE: DNA  
 ; ORGANISM: Homo sapiens  
 US-10-478-914-20

Query Match 40.6%; Score 1930.5; DB 1; Length 2495;  
 Best Local Similarity 40.0%; Pred. No. 9.3e-103;  
 Matches 512; Conservative 0; Mismatches 261; Indels 507;  
 Gaps 75;

Qy 1 GGCAC-----GAGC-----

GAGTTCCTGTCTCT----- 23  
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 Db 357  
 GGAAGTATACTACAGAGCAATACAGTTCTACTTAGAATTCAAGCCTCTGTTGTTAAATGA 416

Qy 24 ----CTGCCAACGC---CGCC-CGGATGGCTTCC-----CAA----  
 AACCGCG- 59  
 ||| || | || ||| ||| | | ||| | ||

Db 417  
 TTTGCTGATGGTGCTGTCTCCACGGTTGGATCACACTCGTGCAGTCAATTATTTTCAGCAA 476

Qy 60 ----ACCCAGCCGCCACTAGCGTCGCCGCC---GC---  
 CCGTAAAGGAGC----- 99  
 | |||| |||| | | ||| || | || | || |

Db 477  
 GGTTAAACAGCTACCACTGGTGAAACCGTATTTGCGTTCAGTTCAGAACCATAACAACAA 536

Qy 100 -----TGAGCC---GAGC-----  
 GGGGGCGCCGCCCGGGGTC---- 128  
 ||| | || | | | | | | ||| ||

Db 537  
 ATCTGTGAATGAATCATTGAACAATCTTTTTATTACAGAAGAAGATTATCAGGCTCTGCG 596

Qy 129 ----CGGTGG--GCAAAAGGCTAC---AGCAGGAGCT-  
 GATGACCC----- 164  
 | | | || | | || | | | || | | | |

Db 597  
 AACATCAATAGATGCTTATGACAACCTTTGACAATATCTCGCTTGCTCAGCGTTTGAAAA 656

Qy 165 TCATGATGTC-TGGCGATAAAGGGATTT-CTGC-----CTTC-----  
 CCT 202  
 |||| | | | | | | | | |||| |||| |

Db 657  
 ACATGAACTCATTGAGTTCAGGAGAATTGCTGCTTATCTCTTCAAAGGCAACAATCGCTG 716

Qy 203 GAATC-----  
 AGACAACCTTTTCAAATGGGTAGGGACCATCCA 240  
 ||| | |||| |||| || | | | ||

||  
 Db 717 GAAACAGAGTGTAGAGCTGTGCAAGAAAGACAGCCTTTACAA---GGATG---  
 CAATGCA 770

Qy 241 TGGAGCAGCTGGA-----ACAGTAT---ATGAAGACCT-----  
 GAGGTATAAGCT 282  
 || ||| | || | || |||| || | ||| |

||  
 Db 771  
 GTATGCTTCTGAATCTAAAGATACTGAATTGGCTGAAGAACTCCTGCAGTGGTTTTTGCA 830

Qy 283 -----CT----CGCTAG-----AGTTCC-----  
 CC 298  
 || ||| | ||| | ||| |

||  
 Db 831  
 GGAAGAAAAAAGAGAGTGCTTTGGAGCTTGTCTGTTTACCTGTTACGATCTTTTAAGGCC 890

Qy 299 AG-TGGCTACCTTTACAATGC-----GCCCA----  
 CAGTGAAGTTTCTCAGCCCTGCT 347  
 || || | || | || | || | || | || | || | || |

|

Db 891 AGATGTCGTCCTAGAACTGCATGGAGGCACAATATCATGGATTTTGC-CATGCCCT-  
AT 948

Qy 348 ATCACCCC-----AACGTGGAC---ACCCAG--GGTAACAT---  
ATGCCTGGACATC- 391  
||| || || | | | | | | | | | | | | | | |  
|||

Db 949  
TTCATCCAGGTCATGAAGGAGTACTTGACAAAGGTGGATAAATTAGATGCTTCAGAATCA 1008

Qy 392 CT-----GAAGGAAAAG-----  
TGGTCTGCCCTGT 416  
|| |||| | ||| ||||| ||||

Db 1009  
CTGAGAAAAGAAGAACAAGCTACAGAGACACAACCCATTGTTTATGGTCAGCCCCAG 1068

Qy 417 ATGATGT-----CAGGACC--ATTCTGCTCTCCATCCAGAG---  
CCTTCTAGG----- 459  
|||| ||||| | ||| ||| ||| || |||| |

Db 1069  
TTGATGCTGACAGCAGGACCCAGTGTTGCCGTCCCTCCCCAGGCACCTTTTGGTTATGGT 1128

Qy 460 -----AGAACC-CAACATTGATAGTCCC-----TTGAACACA-CAT-----  
GCTGCC 499  
| ||| | || ||| ||| ||| ||| |||

Db 1129  
TATACCGCACCCACCGTATGGACAGCCACAGCCTGGCTTTGGGTACAGCATGTGAGATGAA 1188

Qy 500 GAGCT-----CTGGAAAA-----ACCC-----  
CACAGC 522  
| ||| ||| ||| ||| ||| |||

|||  
Db 1189  
GCGCTGATCCTGTAGTCACCTATTTTCGTACTGAAACATCGTCTTTACCCACTTCTCAGT 1248

Qy 523 TTTTAA----GAAGTACCTGCAA-----GAAACC--  
TACTCAAAGCAGGTCACCAG 567  
|| ||| | | || |||| | |||| || | | ||| |

Db 1249  
TTATAATGGGGGAAAACAGGCAACGTGTTCTTGTAACCTTTATTTTCATGAAGGACTTCTT 1308

Qy 568 CCAG----GAGCCCTGACCCAGGCTGCCAGCCTGT-----CCTTGTGT-----  
CG 609  
| | | | | | | | | ||| |||| |

|  
Db 1309 TTTGTTTCTAACTATAAACTTGATCACCT--  
ATGTTAAACCTTATTTTACATTCCACA 1366

Qy 610 TCTTTTTA-ATTTTTCTTAGATGG-----TC---  
TGTCCTTTT 644  
|| |||| | ||| || ||| || || ||

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Db 1367  
TCATTTTAGAATTTATTTTCGAAGGGGAATAGTTTCAATGTTTTATTCACTTGGGCTTTT 1426

Qy 645 TGT-----GATTTCTGTATAGGACT-CTTTATCTT-  
GAGCTGTGGT-----A 684  
| | |||| | | ||| || | |||| |

|  
Db 1427



||  
 Db 1227 ATGTTTCAGTACGAAAATAGGTGAC-TACAGGATCAGCGCTTCATC--  
 TCACATGCTGTA 1171

Qy 80 GCCGCCGCCCGTAAAGGAGCTGAGCCGAGCGGGGGCGCCG-----CC--  
 CGGGG 126  
 || ||| | | ||| || ||| || | ||

||  
 Db 1170 CCCAAAGCCAG-GCTGTGGCTGT-  
 CCATACGGTGGTGCGGTATAACCATAACCAAAAGGT 1113

Qy 127 TCCGGTGGGCAAAAGGCTACAGCAGGAGCTGATGAC--CCTCA--  
 TGATGTCTGGCGATA 182  
 || | || | ||| || | ||| || | ||| || | ||| |

|||  
 Db 1112 GCCTGGGGAGGGACGGCAACACTGGGTCTGCTGTCAGCATCAACTGG-  
 GGCTGACCATA 1054

Qy 183 AA----GGGAT-----TTCTGCCTTCC-----  
 CTGAATCAGA 210  
 || ||| | ||| | || | |||| |

Db 1053  
 AACAAATGGGTTGTGTCTCTGTAGCTTGTCTTCTTCTTTTCTCAGTGATTCTGAAGCATC 994

Qy 211 CAACCTTTTCAAATGGGT-AGGGAC-CATCCATGGAGCAGCTGGAACAGTATATG--  
 AAG 266  
 || | | || | || | || | ||| | || | || | ||

||  
 Db 993  
 TAATTTATCCACCTTTGTCAAGTACTCCTTCATGACCTGGATGAAATAGGGCATGGCAAA 934

Qy 267 ACCTGAGGTATAAGCTCTCGCTAGAGTTCCCCAGTGG----CTACCCTTA-----  
 CAAT 316  
 | | | ||| ||| | |||| | | | |||| |

Db 933  
 ATCCATGATATTGTGCCTCCATGCAGTTTCTAGGACGACATCTGGCCTTAAAAGATCGTA 874

Qy 317 GC--GCCACAGTGAAGTTCCT---CACGCCCTGCTATCACCCCAACGTGGACACC-  
 CAG 370  
 | | |||| ||| || ||| | || | || || ||

|||  
 Db 873  
 ACAGGTAAACAGACAAGCTCCAAAGCACTCTCTTTTTTCTTCTGCAAAAACCACTGCAG 814

Qy 371 GGTAACATATGCCTGGAC---ATCCT--GAAGGAAAAGTGGTCTGCCCTGTAT-  
 GATGTC 424  
 | | | || | ||| | || | ||| |||| || ||

|||  
 Db 813  
 GAGTTCTTCAGCCAATTCAGTATCTTTAGATTGAGAAGCATACTGCATTGCATCCTTGTA 754

Qy 425 AGGAC---CATTCT-----GCTCTCCA-----TCCAG-----  
 AGCCTTCTAGGAG 461  
 | | | | |||| |||| || |||| |||| |

|||  
 Db 753  
 AAGGCTGTCTTTCTTGCACAGCTCTACACTCTGTTTCCAGCGATTGTTGCCTTTGAAGAG 694

Qy 462 A-ACCCAACATTGATAGTCCCTTGAACACA-----CATG--  
 CTGCCGAGCTCTGGAAA 511

|  
 Db 693 ATAAGCAGCAAT-----  
 TCTCCTGAACTCAATGAGTTCATGTTTTTCCAAACGCTGAGCA 639

Qy 512 AAC-----CCCA-----CAGCTTTTAA-----  
 GAAGTACCTG----- 538  
 | | | | | | | | | | | | | | | |

Db 638  
 AGCGAGATATTGTCAAAGTTGTCATAAGCATCTATTGATGTTTCGAGAGCCTGATAATCT 579

Qy 539 -----CAA-  
 GAAACCTACTC----- 552  
 | | | | | | | | | |

Db 578  
 TCTTCTGTAATAAAAAGATTGTTCAATGATTCATTCACAGATTTGTTGTTATGGTTCTGA 519

Qy 553 ----AAAGCA-----GG--TCACCAG-----  
 CCAGG-----A 573  
 | | | | | | | | | | | |

Db 518  
 ACTGAACGCAAATACGGTTTCACCAGTGGTAGCTGTTTAACCTTGCTGAAATAATTGACT 459

Qy 574 GCCC-----TGACCC-----AGGCTGCC-----CAGCCTGTCCTT-----  
 GTGTC 608  
 | | | | | | | | | | | | | | | |

|  
 Db 458  
 GCACGAGTGTGATCCAACCGTGGAGACAGCACCATCAGCAAATCATTTAACAACAGAGGC 399

Qy 609 GT-CTTTTTAATTTTTCCTTAGATGGTCTGT-----  
 CCTT---- 642  
 | | | | | | | | | | | | | |

Db 398  
 TTGAATTCTAAGTAGAACTGTATTGCTCTGTAGTATAGTTCCACATTGGCAACCTTGGTA 339

Qy 643 -----TTTGTGAT----TTCTGTATAGGACTC-----TTTATCTTG--  
 AGCT 678  
 | | | | | | | | | | | | | | | |

|  
 Db 338  
 ATGATATCTTTGAATTGCCCTTCTTTCCAGGCATCAGTTGGATGATTCATCATGGTAATT 279

Qy 679 GTGGTATTTTGTGTTTGTGTT----TTTGTCTTTTAAA-----TTAAG-  
 CCTCGGTTGA 725  
 | | | | | | | | | | | | | | | |

| | |  
 Db 278  
 ATGGCATTATCATATTCTTCATACTTGTACATAACAAAACACCAGTTCTGCCCAAAGATGA 219

Qy 726 GC-----  
 CCTTGTATATTAATAAATGCATTTTTGTCC----- 758  
 | | | | | | | | | | | | | |

Db 218  
 GCTTGTTCTGCAGCTCTTAGCACCTTGGGAATATTCACTCTAGACCAGAACAGCTCCAGG 159

Qy 759 -----TTTT-----TTAAAAAAAAAAAAAAAAAAAA 783  
 | | | | | | | | | | | | | |

Db 158 TGCTCCCTCATTTTCTGAGGCTTAAATTTAGAGTATAGAATA 117

RESULT 15

US-10-478-914-57

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; Sequence 57, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 57
; LENGTH: 2336
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-57
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Query Match          40.4%; Score 1921; DB 1; Length 2336;
Best Local Similarity 33.1%; Pred. No. 2.5e-102;
Matches 512; Conservative 0; Mismatches 264; Indels 772;
Gaps 80;
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```
Qy          1 GGCACG-----AGC--
GAGTTCCTGTCTCT----- 23
      ||| ||           ||| | |||| || |||
Db          100
GGCGCGGTTCAATACCTCGTCTAGCCTGGGTTCCAGTATCTAATTTTTTTTTTGTITTTAA 159
```

```
Qy          24 CTGCCAA-----CGCCGC-----CCGGA-----TGGC-----
TTCC----- 49
      ||| |||         | | |         | |||         ||||         ||||
Db          160
CTGACAAACTCATTTCTCTACTGGGACAGGATGCTGTGCTGGCTGGAAGTTCCATTTCTA 219
```

```
Qy          50 ---CA--AAACC-----GCGACCCAGCCG----
CCACTAGCGTCGCCGCCGCCG-----90
      || || ||         | || ||| |         || |||| | | || || ||
Db          220 CAGCAAGAATCCTATCTGGAACACAGAAGTTGTCCTCTAGC--
CACAGCAGCTCGAACT 277
```

```
Qy          91 -----TAAAGGAGCTG-----AGCCGAGCGGGGGCGCC-----
GCCCCGGGGT 127
      | | ||||         || | |         | ||         | | |
|
Db          278 TTTTGTATTGTCGTTGCTGCTTTCTCCCATC----
ACCCCATCCCTTTTGACAAAGAT 333
```

```
Qy          128 CCGGTGGGCAAAAGGCT-----ACAG--
CAGG----- 152
      || | |||| ||         |||| ||||
Db          334
CCAAGTGTAAAAAGTCTTACGTAACAGTTCAGGACTACTTCGGTCTTTTACTGGGTAAG 393
```



Qy 153 -----AGCTGATGACC-----  
CTCATGA----- 170  
| | | | | | | |

Db 394  
CACTTTCAATTTTTTTTTTTAACTAAAAGCCATTTTAAAATTGAATCTGTTGAGGGGCT 453

Qy 171 TGTCTGG---CGATAAAG-----GGATTTCTGCC-----TTC--  
CCT 202  
| | | | | | | | | | | | | | | |

Db 454  
TGACTAAAATCTTTTAAAGTAATTTGTGTAATGGAATACTGTCAGTGGATTTTTTCGTCTC 513

Qy 203 GAATCAG-AC---AACCTTT---TCAAATGGGTAG-----  
GGACCATCCATGGAGC 246  
| | | | | | | | | | | | | | | |

||  
Db 514  
ATTTCTGCACGTGCTCCTTTGTTCTCAGAACAGAAGCTTTTTTATACACATCCCATAACGC 573

Qy 247 AGCTGGAACAGTATATGAAGACCTGAGGTATAAG---CTC-  
TCGCTAGAGTTCC----- 296  
| | | | | | | | | | | | | | | |

Db 574  
AGCTGGAGAGAGTTATGAAGTCAGTTATTATAAGGAACACAAAGGTTGCTTTCCATTCTT 633

Qy 297 --CCAGTGGCTAC-----  
CCTTACAATG----- 317  
| | | | | | | | | | | |

Db 634  
TGCCTTTAGATAAATTAATTTTTTTGTTTTCTTAAAATGGAGTATTTAAAGAAGGAAGAAA 693

Qy 318 --CGC-----CCACAG-----TGAAGTTCCTCACGCC-  
CTGCT 347  
| | | | | | | | | | | | | |

||  
Db 694  
TTCACAAGAAATAAACTGTTGGAGAATTTAGAAAAGTTTGAAGTTTTTACCACCTTTTCT 753

Qy 348 ATCAC-----CCCAACG--TG-  
GACACCCAGGG----- 372  
| | | | | | | | | | | | | |

Db 754  
ATCTCTAGTTTTGTGTGGCCAAACACTTGTGCCGCCTGGGGCGGTGGGGGTAGAGGCAAG 813

Qy 373 ---TAACA-----TATGCC-----TGGACA-----  
TC 391  
| | | | | | | | | | | |

||  
Db 814  
CATAGACAGAGAGGAATAAGCCAGACATGGACAAAGGCACGAGCCAAAACCAGACAGTC 873

Qy 392 CTG-----AAGG--AAAAGT-----  
GGTCTGCC----- 412  
| | | | | | | | | | | |

Db 874  
CTGGCCGTTTCGATAGGCCAGCAGTGGGTGAGACAGGTCAGCCAGCTGCAGGGGCGGGAGC 933

Qy 413 -----CTGTATGA-----  
TGTCAGGA-- 428

Db 934  
 GGGGGGGCGGTAGGGACATGGATGTGTGAGGTGCTCATGCGTGCGATCGTGACTAGATT 993  
 Qy 429 -----CCATT---CTGCTC-----  
 TCCAT 444  
 |  
 Db 994  
 CTGAAACTGCCAGCCATTTTCCCAGCTCCGCTTTGTGCAATCTAAAGGAATGCATCCCCCT 1053  
 Qy 445 -----CCAGAGCCT--TCTAGGAGA-----ACC-  
 CAACAT-- 471  
 |  
 Db 1054  
 CTGAAGCAGTCTTGCCAGAGCCTAGTGAGGGAGAGAAGTATGGTAAATACCACAACATAT 1113  
 Qy 472 -----TGATAGTCCCTTGAAC-----ACA-----  
 CATGCTGC----- 498  
 |  
 Db 1114  
 GGAATCAGAAAATACCGGAACTGGAGTGGGCAAGGGGAATGCAGAGGGTGTGGAAATT 1173  
 Qy 499 ----CGAGCTCTGGAA-----  
 AAACCCACAG-- 521  
 |  
 Db 1174  
 TTTTAGTGATCTGGAATGTGTTGAGTGACAGGAAGTGCCCCAAGCTTCTCCCCACCAAC 1233  
 Qy 522 -CTTTTAAGAAGTACCTG-----  
 CAAGAAACCTACTCAAAGCAGGTCAC--- 564  
 |  
 Db 1234  
 TCTTCTCAGTCGCGCCTGCTTTTGTCTAACTCTTGTAATCTACACACTACTGCTTACAAA 1293  
 Qy 565 -CAGCCAG-----GAGCCCT---GAC-CCAGGCTGC-----  
 CC----- 592  
 |  
 Db 1294  
 GCTGTCTGAGTTTAAAGACAAAAGAAACCTAAAAGTCTCCTTACTTCATAGTACCTGTGA 1353  
 Qy 593 -----AGCCTGTCC--TTGTGTC----  
 GTCTTTTT----- 616  
 |  
 Db 1354  
 TATGGAAGGAATGTAAAAGCATGACCCTTTAAGCCTATGGACATTTTTTCAGGTATACAG 1413  
 Qy 617 -----AATTTTTCCTTAGA-----  
 TGGTCTG--T 638  
 |  
 Db 1414  
 GAGAAAGATAAAATAATTTTCCACAGAAAAATGAGAATTATGAATTATATAGTTCAGGTT 1473  
 Qy 639 CC-----TTTTTGATTTCTGTATAGG--  
 ACTCTTTATCTTGAGCTGTGGT--A 684  
 |  
 Db 1474 CCAAATCTAATTTTTTAAAGAATTCTGATTCTGCTACACTTTA-  
 CAAATGCTTAGGTTGG 1532

Qy 685 TTTTGTGTTTGTGTTTGTCT-----  
TTTAAATTAAGCCTCGGTTGAGCCCTTGTATAT 737  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1533  
TTCCTAATTTGAAGGAGACTTGTTTTATTTGGTTAATGCATTGCATTTGAACTTGTTTCT 1592  
Qy 738 TAAATAAATGCAT--TTTTGTCCTTTTTTAAAAAAAAAAAAAAAAAAAA 783  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1593 ATTTTCTTTGCATAAATTTGGACTTTGGGAGAAAAATGCAAAGTAATA 1640

Search completed: March 9, 2010, 15:51:40  
Job time : 5.10998 secs

GenCore version 6.3  
Copyright (c) 1993 - 2010 Bioceleration Ltd.

OM nucleic - nucleic search, using sw model

Run on: March 9, 2010, 15:51:16 ; Search time 1 Seconds  
(without alignments)  
1134.946 Million cell

updates/sec

Title: US-10-572-905-3  
Perfect score: 6921  
Sequence: 1 gccgctgccaccgcaccccg.....tcacaaaaaaaaaaaaaaaaaa  
1124

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 417 seqs, 79705 residues

Total number of hits satisfying chosen parameters: 834

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : 7335755.seq:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being  
printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	3132.5	45.3	3210	1	US-10-478-914-4	Sequence 4,

Appli	2	3018	43.6	2437	1	US-10-478-914-61	Sequence 61,
Appl	3	2987.5	43.2	2120	1	US-10-478-914-64	Sequence 64,
Appl	4	2960.5	42.8	3210	1	US-10-478-914-4	Sequence 4,
c Appli	5	2907	42.0	2120	1	US-10-478-914-64	Sequence 64,
c Appl	6	2840	41.0	2198	1	US-10-478-914-17	Sequence 17,
c Appl	7	2833.5	40.9	2437	1	US-10-478-914-61	Sequence 61,
c Appl	8	2800	40.5	2198	1	US-10-478-914-17	Sequence 17,
c Appl	9	2795	40.4	3589	1	US-10-478-914-21	Sequence 21,
c Appl	10	2747	39.7	1946	1	US-10-478-914-62	Sequence 62,
c Appl	11	2704	39.1	2336	1	US-10-478-914-57	Sequence 57,
c Appl	12	2697.5	39.0	2495	1	US-10-478-914-20	Sequence 20,
c Appl	13	2653.5	38.3	2495	1	US-10-478-914-20	Sequence 20,
c Appl	14	2653	38.3	2083	1	US-10-478-914-3	Sequence 3,
c Appli	15	2628.5	38.0	2022	1	US-10-478-914-60	Sequence 60,
c Appl	16	2588	37.4	2336	1	US-10-478-914-57	Sequence 57,
c Appl	17	2574	37.2	2083	1	US-10-478-914-3	Sequence 3,
c Appli	18	2565	37.1	1813	1	US-10-478-914-63	Sequence 63,
c Appl	19	2548.5	36.8	1946	1	US-10-478-914-62	Sequence 62,
c Appl	20	2512.5	36.3	1813	1	US-10-478-914-63	Sequence 63,
c Appl	21	2506.5	36.2	3589	1	US-10-478-914-21	Sequence 21,
c Appl	22	2464.5	35.6	2022	1	US-10-478-914-60	Sequence 60,
c Appl	23	2179	31.5	717	1	US-10-478-914-42	Sequence 42,
c Appl	24	2145.5	31.0	867	1	US-10-478-914-6	Sequence 6,
c Appli	25	2119	30.6	889	1	US-10-478-914-5	Sequence 5,
c Appli	26	2098.5	30.3	867	1	US-10-478-914-6	Sequence 6,
c Appli	27	2086.5	30.1	816	1	US-10-478-914-15	Sequence 15,
c Appl	28	2055.5	29.7	839	1	US-10-478-914-16	Sequence 16,
c Appl	29	2042	29.5	816	1	US-10-478-914-15	Sequence 15,
c Appl	30	1992	28.8	717	1	US-10-478-914-42	Sequence 42,
c Appl	31	1987	28.7	820	1	US-10-478-914-39	Sequence 39,

Appl	32	1982.5	28.6	794	1	US-10-478-914-13	Sequence 13,
Appl	c 33	1975.5	28.5	889	1	US-10-478-914-5	Sequence 5,
Appli	c 34	1970	28.5	938	1	US-10-478-914-69	Sequence 69,
Appl	c 35	1967	28.4	794	1	US-10-478-914-13	Sequence 13,
Appl	36	1967	28.4	1020	1	US-10-478-914-68	Sequence 68,
Appl	37	1964.5	28.4	938	1	US-10-478-914-69	Sequence 69,
Appl	38	1963	28.4	839	1	US-10-478-914-16	Sequence 16,
Appl	c 39	1952.5	28.2	889	1	US-10-478-914-9	Sequence 9,
Appli	c 40	1943	28.1	811	1	US-10-478-914-37	Sequence 37,
Appl	c 41	1938.5	28.0	816	1	US-10-478-914-38	Sequence 38,
Appl	42	1916	27.7	889	1	US-10-478-914-9	Sequence 9,
Appli	c 43	1901.5	27.5	1020	1	US-10-478-914-68	Sequence 68,
Appl	c 44	1879	27.1	814	1	US-10-478-914-36	Sequence 36,
Appl	45	1873.5	27.1	816	1	US-10-478-914-38	Sequence 38,
Appl							

#### ALIGNMENTS

##### RESULT 1

```

US-10-478-914-4
; Sequence 4, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 4
; LENGTH: 3210
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-4

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Query Match          45.3%;  Score 3132.5;  DB 1;  Length 3210;
Best Local Similarity 38.5%;  Pred. No. 1.5e-186;

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[illegible]

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GCCCA 694      ||                               || ||| |      || ||||
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Db            1103
GGTCTCTCTCCTTTTCTGCTGCTGCACATCCCTTCTGCTTCCTCCTTGGTGCAATCCCCA 1162

Qy            695 GAAAAGCA-----TGAAGTAACTG-----
GCTGG----- 718
      |||  ||                               || ||| |||      ||||
Db            1163
GAAGCCCACTCTCCTTCCATCTGCTCTGGAGTCTCTGCTCCTCTTGACTCTCTGGAGTGG 1222

Qy            719 --GTGC--TGGTA-TCTCCTCT-----AAGT-----
AAGGAAGATGCTGG----- 753
      ||||  ||| | | ||| |      ||||  | | || | ||||
Db            1223
CTGTGCCTTGGCAGTGACCTTTGGCCAGGGCAAGTGCCCTCATGACAGGTACTGGGTGCC 1282

Qy            754 --AGAATATGAGT---GCCATG-CATCCAATTCCCAAGGAC-----
AGGCT----- 793
      | | | |||  ||| || | |||  ||| | | |      |||||
Db            1283
CAGGCAGCTAAGTGCCGCCCTGCCACCAGCCCCCTATGGCTTGGGAAGGCTGGGGGTCC 1342

Qy            794 -----TCAG-----CATC-----AGCAAAAATTA--CAG---
TGG 818
      |||  ||||  ||||| ||||| |||
|||
Db            1343
TCTTGGCCAACAGGGTGAAACCCCATCTCTACTAAAAACACAAAAATTAGCCAGGCATGG 1402

Qy            819 TTGATGC-CTTACATGAAATACCAG-----
TGAA 846
      || ||| |  | || | | ||||
||||
Db            1403 -TGGTGCGC--
GCCTGTAGTCCCAGCTACTCAAGAGGCTGAGGCAAGAGAATCGCTTGAA 1459

Qy            847 -----AAAAGGTGAAG-GTGCCGAGCTATAAAC-----
CTCCAGAATATTATTA 889
      | | | ||| || | ||||| |  |      ||||| | |
||
Db            1460
CCCGGGAGTCAGAGGTTGCAGTGAGCCGAGATCGCGCCACTGCACTCCAGCCTGCTGATA 1519

Qy            890 G-----TCT-----
GCATGGTTAAAGT--- 907
      |      |||  ||||| | |
Db            1520
GAGCAAGACTCCATCTCAAAAAAAAAACAACCCAAAATTTGCCTGGCATGGTGGCAGGCATC 1579

Qy            908 -----AGTCATGGATAACTACAT-
TACCTG----- 931
      || ||| || | || | | ||||
Db            1580 TGTAATCCCAGCTACTCGGGAGGCTGAGACAT-
GAGAGCTGCTTGAACCTGGGAGGCAGA 1638

Qy            932 -----TTCTTGCT-----
AATAA 945
      || ||||

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Db          1639
AGTTGCAGTGAGCCGAGATCACACCACTGCACTCCAGCCTGGGTGACAGAGCGAGACTCT 1698

Qy          946 GTTTCTTTTAATCCAATC---CACT-----AACACTTTAGTTATATT---
CA-- 986

      || |      |||| ||      ||||      |||| | | ||| || |
Db          1699
GTCCCCAAAAAATCAAAAAAATCACTTTTGGTAGAGATGCACTCTCGCTATGTTGCCAGG 1758

Qy          987 CTGGT-----TTTACACAGAGAAATACAAAAT--
AAAGAT 1019

      |||||      || |||      || | |||| |
|||
Db          1759
CTGGTCTTGAACCTCTGGGCTCAATTGATCTTCCACCTTGACCTCCAAAGTGCTGGGAT 1818

Qy          1020 CACA-----CATCAAGACTATCTACAAAAATTTATTATA-----
TATTTACAGAAG 1065

      |||      || || | ||| | || | || |||||      | | | ||
||
Db          1819
TACAGGTGTGAGCCACCATGCCTAGCCTCAGGGAATTCTTATAAGAACTCTATGAAGTAG 1878

Qy          1066 --AAAAGCATGCATATCATTAAACAAATAAA-----
ATACTTTTATC 1106

      | | ||| | | || || || |||      || || |
|
Db          1879 GCATCACCAT-
CTTCTCTGTATCCATGGAAAAGAGAGGCCTAGAGATGTATGCTAACTTGC 1937

Qy          1107 AAAAAAAAAAAAAAAAAAAAA 1124

      |||      | | | |
Db          1938 CCAAGCTCACATAGCCCA 1955

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Query Match 43.6%; Score 3018; DB 1; Length 2437;

Best Local Similarity 36.6%; Pred. No. 1.2e-179;  
Matches 758; Conservative 0; Mismatches 357; Indels 956;  
Gaps 120;

Qy 1 GCCGCTG----CCAC-CGCAC-----CCCGC-----  
CATGGAGCGGCCGTCG----C 38  
| | | | | | | | | | | | | | | | | |

Db 19  
GCTGCGGAATTCCTCGAGCACTGTTGGCCTACTGGGTGTACTGTGGAGACTGTCAAAGTC 78

Qy 39 TGC--GCGCCCTGCTCCTCGGCGCCGCTGGG--CT----GCTGCTCCTGCTCC-----  
TG 85  
| | | | | | | | | | | | | | | | | |

Db 79 TCCCGAGCCCAATTTC-  
CGGAAGCGGTGAGTTCTGAAAGAAGTTCTGCACCGTAGTTT 137

Qy 86 CCCC--TCTCCTCTTCCTCCTCTTCGGACACCTGCGGC-----  
CCCTGC--- 127  
| | | | | | | | | | | | | | | | | |

Db 138  
CCCAAGTCTGCGAATCCCCAACCATGAGCGCCTCGGGCGTACTGTCCTTTACCCAGCAAG 197

Qy 128 -----GAGCCGGCC-----TCCTGCCCCGCC-  
CCTGCC 153  
| | | | | | | | | | | | | | | | | |

Db 198  
GATGGGAGCAGGTGCTGGCCAAAGTGAAACGGGCTGTGGTTTACCTGGACGCCGCTGCG 257

Qy 154 CC-----CGCT-GGGCTGC-----CTGCTG--GGC-----  
GAGACCCG- 183  
| | | | | | | | | | | | | | | | | |

Db 258  
CCGAGAGCCTGCACTGGGGCTGCGGATCCACCCGTCTCCTGGAGGCGGTGGGGGGCCCTG 317

Qy 184 -----CGACGC-----GTGCGGC--  
TGCTGCCC--- 204  
| | | | | | | | | | | | | | | | | |

Db 318  
ACTGTCACCTGCGAGAGTTCGAGCCCGACGCAATTGGTGGTGGAGCCAAGCAGCCCAAGG 377

Qy 205 -----TATGTGC-----GCCCGCGGCGAGGGCGAGCCGTG-----  
CGGGGGTGGC 244  
| | | | | | | | | | | | | | | | | |

Db 378 CAGTGTGTTGTGCTGAGCTGCCTGCTGAAAGGCCGGACCGTGGAGATCCTACGG----  
GAC 433

Qy 245 GCGCCCGGCAGGGGGTACTGCGCGCCGGGCATGGAGTGCCTGA---  
AGAGCCG----- 294  
| | | | | | | | | | | | | | | | | |

Db 434  
ATCATCTGCCGCAGTCACTTCCAGTATTGTGTGGTGGTCACAACCGTGAGCCACGCTGTC 493

Qy 295 -----CAAGAGGCGGAAGGGTAAAGCC-----  
GGGGCAGCA 325  
| | | | | | | | | | | | | | | | | |

| | | | | | | |

Db 494 CACCTCACAGCTAATCATGTCCCAGCGGCGGCAGCG----  
 GCCGAGATGGAGGGGCAGCA 549

Qy 326 GCCGGCGGTC-----CGGGTG-----  
 TAAGC 346  
 |||| | || | || | ||

Db 550  
 GCCGGTGTTCGAGCAGCTGGAGGAGAAGCTGTGTGAATGGATGGGCAACATGAACTACAC 609

Qy 347 GGC-----GTGTG-CGTG-----TGCAAGAGCC-----  
 GCTACCCGGTGTGC----- 382  
 ||| ||| | || || | || ||| |||

Db 610  
 GGCCGAGGTGTTCCATGTCCCATTATTGCTTGCCCCTGTTGCTCCCCACTTTGCCTTGAC 669

Qy 383 -----GGCA-----GCGAC-----GGCACCACCT-----  
 AC 403  
 ||| || || |||| |||

Db 670  
 TCCAGCTTTTGCATCCCTTTTCCCACTGCTACCCCAGGATGTGCACCTCCTTAATAGCGC 729

Qy 404 CCGAGCG-----GCT-----GCCAG-----  
 CTGCGC----- 424  
 |||| || ||| ||| | || |||

Db 730  
 CCGACCGGACAAGAGGAAGCTGGGAAGCCTGGGTGATGTGGACTCCACTACGCTAACCCC 789

Qy 425 ---GCCGC--CAGC---CAGA-----GGGCC-----  
 GAGAGC---- 448  
 || || | || ||| ||| ||| |||

Db 790  
 AGAGCTGCTGCTGCAGATCAGATGCCTAGTGTGAGGCCTCAGTTCTCTGTGTGAACATTT 849

Qy 449 -----CGCGGGGA-----GAAGG--  
 CCATCACCAGGTGAGCAAG----- 482  
 || | ||| ||| || | | ||||| |

Db 850  
 AGGAGTACGGGAGGAGTGTGTTTGTGTAGGTTCTTAAGTCAGGTCATCGCTGCGGATCT 909

Qy 483 -----GCACCTGC---GAGCAAG-----GTC-----  
 CTTCCATAGT 510  
 || ||||| || || | || ||| |||

Db 910  
 GGCCAATTATGCCCTGCAAAGAACAGGAAGAAGACTGCTGCAGGCAGGGCATCAGTGGT 969

Qy 511 -----GAC---GCCC-----CCCA-----AGGACATC-  
 TGGA----- 533  
 ||| ||| | || ||||| ||||

Db 970  
 TTTTGTGGACAGAACCCTGGATCTCACAGGAGCAGTTGGACATCATGGAGACAACTTAGT 1029

Qy 534 -----ATGTCAGTGGTGCCCAGG-----  
 TGT-----A 555  
 | || | | |||| |||

Db 1030  
 AGAGAAGATCATTTTCAGCACTTCCCCAGCTCCCAGGCCACACAAATGATGTGATGGTTAA 1089

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Qy          556 CTTGA----GCT-----GTGAGGT--
CATCGG- 576
      |  |||      |||
      |
Db          1090
CATGATAGCGCTCACTGCACTCCATACTGAGGAGGAAAATTATAATGTGGTTGCACCAGG 1149

Qy          577 -----AATCCC-----GACACC-----TGTCCT-----CAT--CTGGA-
AC 604
      || |      |||||      | ||      | |  ||| |
      ||
Db          1150
CTGTCTTTTACAATTCACTGACACCACAGCCAAAGCCCTATGGGAAGCTTTACTGAACAC 1209

Qy          605 AAGGTAAAAAGGGGTCCTATGG-AGTTCAAAG-----GAC-----
AGA 642
      | | | |||| ||      |||| ||||| ||      | |
      |||
Db          1210
TAAGCACAAAGAGGCAGTGATGGAAGTTCGGAGACATCTAGTGGAAGCGGCAAGCAGAGA 1269

Qy          643 ACTCCTGCC-----TGGTG-----ACCGGGACA--ACCTGGCC---
AT 675
      |  |||||      ||| |      ||||| |||  | || ||
      ||
Db          1270
AAACCTGCCAATCAAGATGAGTATGGGGAGAGTCACACCGGGACAGCTCATGTCCTATAT 1329

Qy          676 TCAG-----ACC-----CGGGGTGGC-----
CCAG----- 695
      ||||      |||      |  ||||      ||||
Db          1330
TCAGCTCTTCAAGAACAACCTCAAAGCTCTAATGAATCATTGTGGCCTCCTCCAGCTTGG 1389

Qy          696 -----AAAAGC-----ATGAAGTA-----ACTGGC---TGGG-----
TGCTGGT 726
      |  |||      |||| |      |||| |  ||||      |
      ||||
Db          1390
ACTGGCCACAGCTCAAACGTTGAAACACCCACAGACTGCCAAGTGGGACAACCTTTCTGGC 1449

Qy          727 AT-----CTCC----TCTAAGTAAGGAAGATGCTGGAGAATATG-
AGTG----- 765
      |      ||||      ||  || |  |  ||  | | |  | |  |||
Db          1450
TTTTGAAAGGCTCCTTCTTCAGAGCATTGGGGAGTCAGCAATGTCCGTTGTGTAAATCA 1509

Qy          766 -----CCATGCAT---CCAAT-TCCCA-AGGAC-----
AGGCTTCAGC-----A 799
      ||||| |  || |  |||| || ||      | || ||||
      |
Db          1510
GCTGCTGCCCATGATTAAGCCTGTAACCCAGAGAACCAACGAGGACTACAGCCCTGAGGA 1569

Qy          800 TCAGC-----
AAAAATTACAGTGGTTGATGC 825
      |  ||      | |  | || || |  |
      |
Db          1570

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Db 819  
TACCCCTTCAGGACCCTCCCCACCAGCTCAGCCTGTGGAGGCCTCCCAAGATTGTAGGAAT 878

Qy 141 --GCCCGCCCT-----GCCCC-----  
CGCTGGGCTGCCTGCTGGG-- 174  
| | | | | | | | | | | | | | | |

Db 879  
AGGCCCATCCCTCTCTGGCCATGGCCCCAAGTTCCTGCACACAGGAGCACCCACAGAGAG 938

Qy 175 -----CGAGACCCGCGACGCGTGC---  
GGCTGCTGCCCTATGTGCGCCCGC 217  
| | | | | | | | | | | | | | | |

Db 939  
ACACACACAGGACACAAAACCCCTGGCACGTTTCAGAGACAGAAGCCACAGACACATCC-C 997

Qy 218 GGCAGAGGCGAGC-CGTGCGGGGGTGGCGGCGCCGGCAGG-GGGTACTG-  
CGCGCCGGGC 274  
| | | | | | | | | | | | | | | |

Db 998 GGCACAGACAGACACACAGAG---GCCAGCTCC--  
CTTGCGTGTCCAGCCCCTCCAGAC 1052

Qy 275 A-----TG---  
GAGTGCGTGAAGAGCCGCAAGAGGCGGAAGGGTAAAG 314  
| | | | | | | | | | | | | | | |

Db 1053 ACCACCACTCAGAACTCTGAGAGAGAGCATGGGCAGACACCCTCAGCAGACAGG--  
AGG 1110

Qy 315 CCGGGG-----CAGC-----  
AGCC---- 328  
| | | | | | | | | | | | | | | |

Db 1111  
CCTGAGTTCCAGTCTCCACCTTTATTGTTCTTGAAAGCCCCTGCTCTCTCTGAGCCTTAT 1170

Qy 329 -----GGCGGTCC-GGGTG-----TAAGC-----  
GGCGTGTGC 355  
| | | | | | | | | | | | | | | |

Db 1171  
TTCATCATCTGTAAAATGGGAATGTCCTGAATGACTTCTAAGGCTCTTTCTGGCTTGAAC 1230

Qy 356 -GT--GTGCAAGAGCCGCTACCCG--GTGTGC--GGCAGCGACGGC-  
ACCACCTACCCGA 407  
| | | | | | | | | | | | | | | |

Db 1231  
TGTCAGAGCCAAGCCACATCCCTCCTTGGGCAGGGCAGCAGCTGCTGCCACAGCCTCCA 1290

Qy 408 GCGGCTGCCAGCTGC--GCGCCGCCAGCCAGAG-----  
GGCCGAGAGCCG 450  
| | | | | | | | | | | | | | | |

Db 1291 GCGGCTGCCA-  
CTGTGGGCTCTGGGAGCCGAGCGATGCTGTGTGAGAGGCAGAGTGCCA 1349

Qy 451 CGG--GGAGAAGGCCATCACCCAGGTCAG-----CAAGGGCACCTGCGAG--  
CAAGGTCC 501  
| | | | | | | | | | | | | | | |

||  
 Db 1350 AGGATGAAGCTGGCACTGAAC--  
 AGTAAGCGGCTCCAGGCCTCTCTGGGCCCAGGGCCC 1407

Qy 502 TTCCAT---AGTGACGCCCCCAAGGAC---ATCTGGAAT--GTCACCTGG--  
 TGCCCAG 550  
 ||| || | || || |||| | | ||| | ||

Db 1408  
 AGCCAATTTCTGTTCTGTTCTGTAGAACGCTCTCTGGATTCCATAGCTGGAATCTCC-- 1465

Qy 551 GTGTACTTGAGCTGTGAGGTCATCGGAATCCC-----GAC-  
 ACCTGTCCTCATCTG 600  
 | | | | ||| || |||| | | ||| || |

|||  
 Db 1466 -TCTCTTAGCTCAGTGA-  
 AAAATAAAAATCCCAAATGGTGTGCCTACCTTCCCACTTCT- 1522

Qy 601 GAACAAGGTAAAAGGGGTCACTATGGAGTTCAAAGGACAGAACTCCTGCCT-----  
 GG 654  
 || || ||| || ||||| || | |||||

||  
 Db 1523 -TAC-TGGCTTCCAGGAGTC---  
 TTGGAGTTCATAGCCCCCGAGCCTGCCTTAAAGGGG 1577

Qy 655 TGACCGGGACAACCTGGCCATTTCAG--ACCC----GGGGT---GGC--  
 CCAGAAAAGCAT 703  
 || || ||| || | ||| | | ||| ||| ||| ||

Db 1578 TGTCC--TCCACCCCCACCTACAGCTTCACAGGAGGGGAGAGGGCATCCAG---  
 TGCTA 1632

Qy 704 GAAGT--AACTGGCT-GGGTGCTGGTATCTC----CTCTAAGT-  
 AAGGAAGATGCTGGAG 755  
 | ||| || || || | ||| ||| | || || ||| | |||

|  
 Db 1633  
 GGAGTAGAAGTGTCTCCAGCTCTGTTCTCTTGGGGCCCTGGGTGAAGGTGGGGTCTGGGG 1692

Qy 756 AATATGA-----GTGCCAT-----GCATCC-  
 AATTCCCAAGGACA---- 789  
 |||| | || | ||| || || || ||

Db 1693  
 CTTATGAAATAGGTCTGGGCTTTGAGGAGGATGGAGCAGCCTCATTATGTGGGGAAGATG 1752

Qy 790 -GGCTTC---  
 AGCATCAGCAAAAATTACAGTGGTTGATGCCTTACATGAAATACCAGTGA 845  
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||  
 Db 1753 GGGCCTCTGGGGCGTCA-CTGAGACCACA---  
 GGTGGGGCCGGGGCTGGACCGCAGCTG- 1807

Qy 846 AAAAAGGTGAAGGTGCCGAGCTATAAACCT---  
 CCAGAATATTATTAGTCTGCATGGTTA 902  
 |||| |||| || ||| || | | ||||

Db 1808 TCTTGGGTGCCTGTGCC-TGCACCCCTCCTCACCCTAGAGACGGAAGATGTGCA-  
 AAAAG 1865

Qy 903  
 AAAGTAGTCATGGATAACTACATTACCTGTTCTTGCCTAATAAGTTTCTTTTAATCCAAT 962  
 |||| || | || |||| |||| || | | | | ||| ||

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Db 1866 AAAGAAGG-AAGGGCAACTGCATT-CCAGCCC---  
CACACTGTGATGACTTTTGAGCCTGT 1920

Qy 963 CCACTAACACTTTAGTTATATTTCACTGGTTT-  
TACACAGAGAAATACAAAATAAAGATCA 1021

|| | | | | | | | | | | | | | | | | | |  
||

Db 1921 CCTTTCCTCCTTGAGCCTGT---  
CTTGCTTGTCCCCTGTAAAATGAACAGTCCCCCTCT 1977

Qy 1022 CAC-----ATCAAGACTATCTACAAAATTTATTATATATTTA-  
CAGAAGAAAAGC 1071

| | | | | | | | | | | | | | | | | | | |  
|

Db 1978  
CCCCCAAATAGTAATAATACATGTTTCAAAGGGTGACCATTTATAAAGCATATGACAAAC 2037

Qy 1072 ATGCATATCATTAACAAATAAAATACTTTTTATCACAAAAAAAAAAAAAA 1123

||||||| |||| | || |||| | | ||||||||| |  
Db 2038 ---CATATCAATAAATGTAACCTATTCTTTTAAAAAAAAAAAAAAAAAGGCCA 2086

#### RESULT 4

US-10-478-914-4/c  
; Sequence 4, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 4  
; LENGTH: 3210  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-4

Query Match 42.8%; Score 2960.5; DB 1; Length 3210;  
Best Local Similarity 35.9%; Pred. No. 2e-175;  
Matches 746; Conservative 0; Mismatches 357; Indels 973;  
Gaps 126;

Qy 1 GCCGCTG-----CCACC---GCA-----CCCCGC--  
CATG--- 25

||| ||| ||||| ||| ||||| | | ||  
Db 2134

GCCTCTGAAAGTCAGGATACTGACCACCTCGGCATCTCTCCCCTTCCCCACTGCTTGCGA 2075

Qy 26 -----GAGC-GGCC--GTCGCTGCGCGC-CCTGCT----CCTCGGCGCCGC---  
TGGGC 68

| || |||| | | | ||| || || | | | | ||

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||
Db          2074
ATGCCAGTGTCTGGCCTGTTTCCTTAAACGCACCAGCTCATCCCCAGAGCAGCCTGTGTGC 2015

Qy          69 T-----GCTGCTCCTGCTCCTGCC--CCTCTCCTCTTCCTCCT-----
CTTC-- 108

          |          ||||| || ||||| ||  ||||  |||  | |||          || |
Db          2014 TCTGCCAGCGACTGCTACTTCTCCT-
CCGGCCTCAGCTCAACATCCCAGCTATGCTACCC 1956

Qy          109 -----GGACA-----CCTGC-----
GGCCCCCT----- 125

          || ||          | | |          |||| ||

Db          1955
TGGGCTATGTGAGCTTGGGCAAGTTAGCATACATCTCTAGGCCTCTCTTTCCATGGATAC 1896

Qy          126 -GCGA-----
GCCGGCCTCCT----- 140

          | ||          |||  | || |

Db          1895
AGAGAAGATGGTGATGCCTACTTCATAGAGTTCTTATAAGAATTCCCTGAGGCTAGGCAT 1836

Qy          141 ----GCCCCCCCCCTG---CCCCCGC-----
TGGGCTG-----C 166

          || | | ||||          ||| ||          |||| |

|
Db          1835
GGTGGCTCACACCTGTAATCCCAGCACTTTGGAGGTCAAGGTGGGAAGATCAATTGAGCC 1776

Qy          167 CTGCTGGGCGAGACCCGC---GAC-----
GCGTGCGGCTGTGTCCTATGTG--- 210

          | | | | ||||| ||  | |          | ||||  || || ||  | |||
Db          1775 CAGGAGTTCAAGACCAGCCTGGGCAACATAGCGAGAGTGCATCT-
CTACCAAAAGTGATT 1717

Qy          211 -----CGC-----
CCGCGGCGAGGGCGAGCCGTG---- 234

          |||          ||  |||  || | || |||

Db          1716 TTTTGTATTTTGGGACAGAGTCTCGTCTGTACCCAGGC--
TGGAGTGCAGTGGTGT 1659

Qy          235 ----CGG-----GGGT---GGCGGC-----
GCC-- 250

          |||          |||  || ||          |||

Db          1658
GATCTCGGCTCACTGCAACTTCTGCCTCCCAGGTTCAAGCAGCTCTCATGTCTCAGCCTC 1599

Qy          251 -----GGCAGGGGGTAC---TGC--GC-----
GCCGGGC----- 274

          || |||  |||  |||  ||          ||| |||

Db          1598
CCGAGTAGCTGGGATTACAGATGCCTGCCACCATGCCAGGCAAATTTTGGGTTGTTTTTT 1539

Qy          275 -----ATGGAG---TGCGTGAAGAGCC-GCAAGAG-
GCGGAAGGGTAAAGCCGGGGCA-- 322

          |||||  |||  |  |||  ||  |||  || |  | |  | |||  ||

Db          1538
TTGAGATGGAGTCTTGCTCTATCAGCAGGCTGGAGTGCAGTGGCGCGATCTCGGCTCACT 1479

Qy          323 GCAGCC---

```

GGCGGTCCGGGTGTAAGC----- 346  
| | | | | | | | | | | | | | | |  
Db 1478 GCAACCTCTGAC-  
TCCCGGGTTCAAGCGATTCTCTTGCCTCAGCCTCTTGAGTAGCTGGG 1420  
Qy 347 -----GGCGTG-----TGC-----  
GTGTG----- 360  
| | | | | | | | | | | | | | | |  
Db 1419  
ACTACAGGCGCGCACCACCATGCCTGGCTAATTTTTGTGTTTTTAGTAGAGATGGGGTTT 1360  
Qy 361 -----CAAGAG-----CCG--CTACCC-----GGTGTGC--  
GG 384  
| | | | | | | | | | | | | | | |  
| |  
Db 1359  
CACCTGTGGCCAAGAGGACCCCGAGCCTTCCCAAGCCATAGGGGGCTGGTGGGCAGGG 1300  
Qy 385 CAGC-----GAC---GGCACCACTACC---CGAGCGGC---  
TGCC----- 416  
| | | | | | | | | | | | | | | |  
Db 1299  
CGGCACTTAGCTGCCTGGGGCACCCAGTACCTGTTCATGAGGCACTTGCCCTGGCCAAAGG 1240  
Qy 417 -AGCTGC---GCGCCGCCA-GCCAGAGGGCCGAGAG-----CC---  
GC----- 451  
| | | | | | | | | | | | | | | |  
Db 1239  
TCACTGCCAAGGCACAGCCACTCCAGAGAGTCAAGAGGAGCAGAGACTCCAGAGCAGATG 1180  
Qy 452 ---GGGGAGAAGGC--C-----AT--CACCCAGGT-----  
CAGC 478  
| | | | | | | | | | | | | | | |  
| | | |  
Db 1179  
GAAGGAGAGTGGGCTTCTGGGGATTGCACCAAGGAGGAAGCAGAAGGGATGTGCAGCAGC 1120  
Qy 479 A-----AGGGC-----ACCTG-----  
CGAG 493  
| | | | | | | | | | | | | | | |  
|  
Db 1119  
AGAAAAGGAGGAGGACCGGGGGTCTGAGGGCTTGGGGTGATGAGGCCAGAGTTCCAAA 1060  
Qy 494 CAAGGTC-----  
C----- 501  
| | | | | | | | | | | | | | | |  
Db 1059  
CAGGGTCTGGGTGCAGGATGAGGACAGAAGAAAACAGAGAACCCAAAAGGGGCAAGAGGT 1000  
Qy 502 ---  
TTCCATAGTGACGCCCCCAAGGA-----C 526  
| | | | | | | | | | | | | | | |  
|  
Db 999  
TGGTCCCTTACTTTTACTCTCCTGGGAGGAGGATGGGTACACCACACAGTTGGATGGTGC 940  
Qy 527 ATC-TGGAATGTC---ACTGGTGC-----CCAGGTGTACTTGAGCT--  
GTGAGGT 570  
| | | | | | | | | | | | | | | |

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|||||
Db          939 ATCTTTGCCTGTCTGCACCTGCAGCTCCATGGCACCATG-
GACCTGTGCTCCGAGTGGT 881

Qy          571 CAT--CGGAATCCCGACACCTG-----TCC-----
TCATCTGGA 602
          | | || | | || || |
|
Db          880
GGTGCCTGATCTCCACCACCAGGCAGCAGTAGAGGCCGCTATCCAGCAGGGTCAGGTTGC 821

Qy          603 ACAAGGT-
AAAAAGGGGTCACTATGGAGTTCAAAGGACAGAACTCCTGCCTG----- 653
          || ||| | || || | || || | || | || || | || |
Db          820 GCATGGTGTAGGAGAAGTTGCCATGGTGGTCGGAGGCC--
GACTCCAGCCCGTGGCGCTG 763

Qy          654 -----GTGACCGG----GACAACCTGG-----CCATTTCAGACCCGG-
GGTGGCCC 693
          || | || | || || || | || | | | | | | |
||
Db          762 AGCCAGGTTCGTGGCTGGTGTGGCAGCCTGGTGGCCTCCAT--
GGTGCAGGTGAAGGTCC 705

Qy          694 AGAAAAAGCATGAAGTAAC----TGGCTGG-----GTGCTGGTAT-
CTCCTCTAAGTAAG 742
          | || | || | || | || || | || || | || || |
|
Db          704 TGGAA--
CGTGAGGTTGCGGATGGGCGCGCTCTGAGCAGGTCTGCACCTCGCCCCTCG 647

Qy          743 GAAGATGC-----TGGAGAATATGA----GTGCCATGCATCCAAT--
TCCCAA 784
          || || | || || | || || | || || | || ||
|||||
Db          646 --
AGCTGCGGTACCACGTCTTGTAGAAGGTCACATCGTGCCCTTTGTCCACAGGGCCCAA 589

Qy          785 GGACAGGC-----TTCAGCATC---AGCAAAAATTACAGTG-----
GT 819
          | | || | || || | | | | || || |
||
Db          588
GAGCCTGCAGGTGAGGGTGACGTTCTGCCCCTCGGGACAGACATACAGGGAATACGGCGT 529

Qy          820 TGATGCCTT-----ACATGAAATAC-CAGTGAAAAAAGG-----
TGAAG 857
          | || || | || || | || || | || || | || ||
Db          528
GGCGACCTTGAAGGCTGCCACCGGACCTGCTCAGAGAGAGGAGAGCCCTGTCACCTGACT 469

Qy          858 GTGCC-GAGCTAT-----AAACCTCCA-----GAATATTATTAG--
TCTGCATGGTT 901
          | || | || || | || || | || || | || || |
||
Db          468 GATCCAGTGCTACTCCTGGCAACC-CCAGAGCGGGGAAGAACCTTAGCCTCTGC-
TACTT 411

Qy          902 AAAAG----TAGTCATG-----GATAACTACATTACCTGTTCTTGCCTAATAAGT---
TT 949

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      ||      | || |      | | ||      |||      |||| | |
||
Db      410
CCCAGCCACAGGCCAGGGGCATGTCAGCTGACCTCCCTAAGACTGCCTTCTGCATTTGTT 351

Qy      950 CTTTTAATCCAATCCA--CTA-----ACA----CTT-----
TAG 977
      |      | ||| |||| |||      |||      |||
|||
Db      350
CACAAACCCCACTCCATCCTAGGCTGTTGTAGGGGGAGTCACAGAAGCTTCCCCAACTAG 291

Qy      978 TTATATTCCTGGTTTT---ACA---CAGAGAAATAC-----
AAAATAAAG---- 1017
      | || |||| |      |||      ||| || | ||      || ||
Db      290 GGGTGCTC-
CTGGATGCTGGACAGGGCAGGGAGAGACTTGGAGGGCAGTGATGCAGTCGG 232

Qy      1018 ----ATCACACATC----AAGACTATCTACAAAAATTTAT-----
TATATATT---- 1057
      || | | ||      ||| ||| | |||| | |      | ||
Db      231
GTGTGTCCCTCTTCCCAGTAGAGTATATGCAAAACCTGTTGGGTGGGAGGCAGGTTGGGG 172

Qy      1058 TACAGAA-----GAAAAGCA--TGCATATCAT-----
TAA 1085
      ||| |      ||| |||| | | | || |      |
|
Db      171
AGCAGGAAGGCTGTTTCGAACAGCAGCTCCTTGTCTTGGCCGCTCTGTAGGGGCCATCA 112

Qy      1086 ACAAATAAAATACTTTTTATCACAAAAAAAAAAAAA 1121
      ||| |      ||| || | | | | || |
Db      111 ACACCTCTGCCCCTTCCTA-CTCCTAGGACTGAACA 77

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# RESULT 5

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US-10-478-914-64/c
; Sequence 64, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 64
; LENGTH: 2120
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-64

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Query Match 42.0%; Score 2907; DB 1; Length 2120;  
Best Local Similarity 38.2%; Pred. No. 9.7e-173;  
Matches 678; Conservative 0; Mismatches 402; Indels 696;  
Gaps 98;

Qy 1 GCCGCTGCC--ACC-----GCAC-----CC--  
CGCCATGGAGCGGCCGTCGCT 39  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1885 GCAGTTGCCCTTCCTTCTTTCTTTTGCACATCTTCCGTCTCTAGGGTGAGGAGG--  
GGT 1828

Qy 40 GCGCGCCCTGCTCCTCGGCGCCGCTGGGCTGCTGC--  
TCCTGCTCCTGCCCCTCT----- 92  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1827 GCAGGCAC-----AGGCACC-  
CAAGACAGCTGCGGTCCAGCCCCGCCCCACCTGTGG 1776

Qy 93 CCTC--TTCCTCCTCTTCGGACACCTGCGGCCCT-----GC-  
GAGCCGGCCTCCT 140  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 1775 TCTCAGTGACGCCCCAGAGG-  
CCCCATCTTCCCCACATAATGAGGCTGCTCCATCCTCCT 1717

Qy 141 ----GCCC-----GCCCCTGCCCCCG-----  
CTGGGCTGCCTG---- 169  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1716  
CAAAGCCCAGACCTATTTTCATAAGCCCCAGACCCACCTTCACCCAGGGCCCCAAGAGAA 1657

Qy 170 CTGGGC--GAGACCC-GCGACGCGT-  
GCGGCTGCTGCCCTATGTGCGCCGCGGCGAGGG 225  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1656  
CAGAGCTGGAGACACTTCTACTCCTAGCACTGGATGCCCTCTCCCCTCCTGTGAAGCTGT 1597

Qy 226 CGAGCCGTGCGGGGTGGCGG-CGCC-----GGCA-----  
GGGGGTACTGCGCGCCG 271  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1596 AG---GTG-  
GGGGGTGGAGGACACCCCTTTAAGGCAGGCTCGGGGGGCTATGAACTCCA 1542

Qy 272 GG---CATGGAGTGCCTGAAGAGCC-GCAAGAGGCGGAAGGGTA---  
AAGCC----- 316  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1541 AGACTCCTGGA-----  
AGCCAGTAAGAAGTGGAAGGTAGGCACACCATTTGGGA 1492

Qy 317 -----GGGG---CAGC-----AGCC-----  
GGCGGTC- 335  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1491  
TTTTTATTTTTCAGTGAAGAGAGGAGATTCCAGCTATGGAATCCAGAGAGCGTTCT 1432

Qy 336 -----CGGGTGTAAGCGG---CGTGTGC-----  
GTGTGCAAGAGCCGCTACC 374

```
|
Db          1431
ACAGGAACAGAAACAGAAAATTGGCTGGGCCCTGGGCCCAGAGGAGGCCTGGAGCCGCTTAC 1372

Qy          375 CGGTGTGCGGCAGCGAC-----GGCAC-----CAC-----
CTACC 404      | | | | |||| |         |||||           ||             ||

||
Db          1371
TGTTTCAGTGCCAGCTTCATCCTTGGCACTCTGCCTCTCACACAGCATCGCTCCGGCTCCC 1312

Qy          405 CGAGC-----GGCTGCC-----AGCTGC-GC-GCCG-CCAGCC---
AGAGG 439      ||||           ||| |||           || || || || || || || ||

||||
Db          1311
AGAGCCCACAGTGCCAGCCGCTGGAGGCTGTGGCAGCAGCTGCTGCCCTGCCCAAGGAGG 1252

Qy          440 GCCGAGAGC----CGCGGGGAG--AAGGCCA-----
TCACCCAGGTCA- 476   | | | | | | | | | | | | | | | | | | | | | |

||
Db          1251
GATGTGGGCTTGGCTCTGACAGTTCAAGCCAGAAAGAGCCTTAGAAGTCATTCAGGACAT 1192

Qy          477 -----GCA-----AGGGCACC-
TGCGAGCAAGGTCTCTCCA----- 506       ||           | ||| | | | |||| | | | ||| |

Db          1191
TCCCATTTTTACAGATGATGAAATAAGGCTCAGAGAGAGCAGGGGCTTTCAAGAACAATAA 1132

Qy          507 ---TAGTGAC-----GCCCCCAAGGACATCTG-
GAATGTCACTGGTGCCCA--- 549       | | |||           ||| || | | ||| | |||||

Db          1131 AGGTGGAGACTGGAActcagGCCTCCT---GTCTGCTGAGGGTGTC-----
TGCCCATGC 1080

Qy          550 -----GGTGTACTTGAGCTGTGAGGTCATCGGAATCCCGACAC-----
CTGTC 592      | ||           |||| ||| ||| | | | ||||           |||

|
Db          1079
TCTCTCTCAGAGTTTCTGAGTGGTGGTGTCTGGAGGGGCTGGACACGCAAGGGAGCTGGC 1020

Qy          593 CTCATCTGGAACAAGGTAAAAAGGG--GTCACTATGGAGT---
TCAAAGGACAGAAC--- 644   ||| | || | | | | ||| || || ||| | || | || |

Db          1019
CTCGTGTGTGTCTGTCTGTGCCGGGATGTGTCTGTGGCTTCTGTCTCTGAACGTGCCAGG 960

Qy          645 -----TCCTG-----CCTG-GTGACCGGGAC-----
AAC 667        |||||           |||| ||| | || ||

|
Db          959 GGTTTTGTGTCTGTGTGTGTCTCTGTGGGTGCTCCTGTGTG-
CAGGAAC TTGGGGCC 901

Qy          668 CTGGCC-----ATTCAGAC---
CCGGGGTGGCCCCAGAAAAGCATGAAGT 708
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|          |||||
Db          900 ATGGCCAGAGAGGGATGGGCCTATTCTCTACAATCTTGGGAGGCCTCCACAGGC-
TGAGCT 842

Qy          709 AACTGGCTGGGTGCTGG-----
TATCTCCTCTAAGTAAGGAA 745
          || ||||| |||

|||||
Db          841
GGTGGGGAGGGTTCCTGAAGGGTAGAGTGAAGATGGGGACTTTACTCCCAGCGGAGAGGAA 782

Qy          746
GATGCTGGAGAATATGAGTG----- 765
          || | || ||| | ||

Db          781
GAAACCAGAAGATAGGCTTGGGGCATGGATGGGAAAGGTCTTGGAAGTAGGATGGGGCAA 722

Qy          766 -----CCATGCATCCAAT-----TCCCAAG-----GACAGGCT-----
TCAGCA 799
          | | || | ||| |||| | |||| ||

||
Db          721
GGGAAACAAAGCCCCAAATGGAGTATGGGTCCCTGGAAGTTGACACACTCTTAGCCCTCA 662

Qy          800 T-----CAGCAAA---AATTAC-----AGTGGT----TGA--
TGCC----- 826
          | |||| | | || ||||| ||| |||

Db          661
TGGGGGGCCCAGCCCAGTGGGTAACCCCGGGGAAGTGGTCACATGACGTGACACTTCTCAG 602

Qy          827 ----TTACATGAAATACC-----
AGTGAAAAAAGGT--- 853
          || | ||| || || ||||| ||||

Db          601
CTGATTGCTTGAGATCCCCCAGTGTGGCCTGGGCCTTGTCCTTGAGTGAGCCCAGGTTCA 542

Qy          854 -----GAAGG-----TGCC-----
GAGCTATAAACCTCCAGAATATTATTAG 890
          ||||| |||| ||| | ||||| | | |

|
Db          541 AGCCAGGAAGGCTGGCCAGCTGCCCAAGGACTGAGGCCTTCTCCTCCT-
CCTCCTCTGTG 483

Qy          891 TCTGCATGGTTAAAAGTAGTCA-----TGGATAACTACA-----
TTACCT-----G 931
          || | | | | | | || || || | || || ||||

|
Db          482
TCCTCCTCGATCATCTTGGCCAGCTCCCGGGGCAGCTCCACGTCTCCACCTGCCATCTGG 423

Qy          932 TTCTTGC-CTAATAAGT----TTCTT-----
TTAATC-----C 959
          ||| || | | || || |||| || ||

|
Db          422
ATCTGGCTCTCATCTGTCTCGTTCTTGGGTAGCCGGTATTTGTCTCGGAAGTGGCTCCGC 363

Qy          960 AAT-----CCACTAACACTTTAGTTATATTCACTGG-----
TTTTAC 996

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```
|
|
Db          362
AGTGTGGCCCCGCTCTGCCTTCCTCTGTGTGAACACTGTGCATCCCGCTCCATCTTCTCTTCC 303

Qy          997 ACAGAGAAATACAAAATAAAGATC--ACACATCAAGACT-----
ATCTACAAA 1042

| | |||           |||      ||   || | ||   | ||           ||   |
Db          302 AC-
GAGTTGCTTCTGATACTCCTCGTACTCCTCCCGGCTCATGCCCTGAGCTTCGGCTGC 244

Qy          1043
AATTTATTATATATTTACAGAAGAAAAAGCATGCATATCATTAAACAAATAAAATACTTT- 1101
        | |    ||||| |       ||   || | ||       | | | |   | |||
Db          243 CGACTTGTC CCCCATCTCCCTTATCCTCGCC-
GCTCCCAGGCTCC CAGTGAGGTTCTTCA 185

Qy          1102 -----TTATCACAAAAAAAAAAAAA 1119
                        | |||| |   ||   |
Db          184 GCTGGCCGCC CACCATGGTCTTCAACCATGAACGCCA 149
```

Db 183 ATTGGACGCAGATTTGATGATGCTGTTGTCCAGTCTGATATGAAACATTGGC-  
CCTTTAT 241

Qy 62 GCTGG-----GCTGCT-----GCTCCTGCTCC-----  
TGCCC----- 88  
| | | | | | | | | | | | | | | | | | | | | |

Db 242  
GGTGGTGAATGATGCTGGCAGGCCCAAGGTCCAAGTAGAATACAAGGGAGAGACCAAAAG 301

Qy 89 ---CTCTCC-----TCTTC-----  
CT-----C 102  
| | | | | | | | | | | | | | | | | | | | | |

Db 302  
CTTCTATCCAGAGGAGGTGTCTTCTATGGTTCTGACAAAGATGAAGGAAATTGCAGAAGC 361

Qy 103 CT--CTTCGGACACCTGCGGCCCTGC-----GAGCCGGCCTCC-  
TGCCCGCCCC 149  
| | | | | | | | | | | | | | | | | | | | | |

Db 362  
CTACCTTGGGAAGACTGTTACCAATGCTGTGGTCACAGTGCCAGCTTACTTTAATGACTC 421

Qy 150 TGCCCCCGCTGGGCTGCC-----TGCTGG-----  
GCGAGACCCGCGACGCGTG----- 192  
| | | | | | | | | | | | | | | | | | | | | |

Db 422 T--  
CAGCGTCAGGCTACCAAAGATGCTGGAACATTGCTGGTCTCAATGTACTTAGAATT 479

Qy 193 -----CGGCTGCTGCC-CTATGTGCGCCCGCGGCGAGGGC-----  
GAGC- 230  
| | | | | | | | | | | | | | | | | | | | | |

Db 480 ATTAATGAGCCAACTGCTGCTGCTAT---  
TGCTTACGGCTTAGACAAAAGGTTGGAGCA 536

Qy 231 -----CGTGC-----GGGGGTGGC-----GGCG--  
CC----- 250  
| | | | | | | | | | | | | | | | | | | | | |

Db 537  
GAAAGAAACGTGCTCATCTTTGACCTGGGAGGTGGCACTTTTGATGTGTCAATCCTCACT 596

Qy 251 -----GGCAG-----GGGG-----TACTGC-----  
GCGCCGGGCATGGAGTGCGT 285  
| | | | | | | | | | | | | | | | | | | | | |

Db 597 ATTGAGGATGGAATCTTTGAGGTCAAGTCTACAGCTGGAGACACC-CACTTGG-GTG-  
GA 653

Qy 286 GAAG-----AGCCGCAAG-----  
AGGCGGAAGGGTAAAGCCGGGGCAGC 324  
| | | | | | | | | | | | | | | | | | | | | |

Db 654 GAAGATTTTGACAACCGAATGGTCAACCATTTTATTGCTGA--  
GTTTAAGCGCAAGCATA 711

Qy 325 AGCCGGCGGTCCGGG-----TGTAAG-----  
CGGCGTGTGCGTGTG 360  
| | | | | | | | | | | | | | | | | | | | | |

Db 712



Qy 657 -ACCGGG-----ACAACCT-----GGC---  
CATTGAG- 679  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1304  
TGCCATGACAAAGGATAACAACCTGCTTGGCAAGTTTGAACCTACAGGCATACCTCCTGC 1363

Qy 680 -ACCCGGGGTGGCCCAGAAAAGCATGAAGTAAC---TGGC-TGGGTGC---TGGTAT-  
CT 730  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1364 ACCCCGAGGTGTTCC---  
TCAGATTGAAGTCACTTTTGACATTGATGCCAATGGTATACT 1420

Qy 731 C-----  
CTC----- 734  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1421  
CAATGTCTCTGCTGTGGACAAGAGTACGGGAAAAGAGAACAAGATTACTATCACTAATGA 1480

Qy 735 -----  
TAAGTAAGGAAG-----A 747  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1481  
CAAGGGCCGTTTGAGCAAGGAAGACATTGAACGTATGGTCCAGGAAGCTGAGAAGTACAA 1540

Qy 748 TGCTG-----GAGAATATGAGTGCCATG----CATCC---AATTCCCAAG-GAC---  
AGG 791  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1541  
AGCTGAAGATGAGAAGCAGAGGGACAAGGTGTCATCCAAGAATTCACCTTGAGTCCTATGC 1600

Qy 792 CTTGAGCAT--CAGCAA-----AAATTACAGTG-----  
GTTGATGC 825  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1601  
CTTCAACATGAAAGCAACTGTTGAAGATGAGAACTTCAAGGCAAGATTAACGATGAGGA 1660

Qy 826 CTTACATGAAAT-----ACCAGTGAAAAAAGGTGA-----  
AGG----- 858  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1661  
CAAACAGAAGATTCTGGACAAGTGTAATGAAATTATCAACTGGCTTGATAAGAATCAGAC 1720

Qy 859 TGCCGAG-----CTATAAACCTC--CAGAA-----  
TATTATTAGTCTGCA----- 896  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1721  
TGCTGAGAAGGAAGAATTTGAACATCAACAGAAAGAGCTGGAGAAAGTTTGCAACCCCAT 1780

Qy 897 -----TGTTAAAAGT-----AGTCAT----GGATAACTAC-----  
ATTACC 929  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1781  
CATCACCAAGCTGTACCAGAGTGCAGGAGGCATGCCAGGAGGAATGCCTGGGGGATTTC 1840

Qy 930 T-----  
 GTTCTTGCCTAATAAGTTTCTT----- 952  
 | | | | | | | | | |  
 Db 1841  
 TGGTGGTGGAGCTCCTCCCTCTGGTGGTGCCTTCCTCAGGGCCCACCATTGAAGAGGTTGA 1900  
  
 Qy 953 TTAATCCAA-----TCCAC-----  
 TAACACTTTAGT-----T 979  
 | | | | | | | | | | | | | | | |  
 |  
 Db 1901  
 TTAAGCCAACCAAGTGTAGATGTAGCATTGTTCCACACATTTAAAACATTTGAAGGACCT 1960  
  
 Qy 980 ATATTC-----ACTG-----GTTTTACACAGAGAA-  
 ATACAAAATAAAGATCACAC 1024  
 | | | | | | | | | | | | | | | |  
 Db 1961  
 AAATTCGTAGCAAATTCTGTGGCAGTTTTTAAAAAGTTAAGCTGCTATAGTAAGTT----- 2015  
  
 Qy 1025 ATCAAGACTATCTACAAAAATTTATTAT-----ATATTTACAGAAG-----  
 AAAAGCA-T 1073  
 | | | | | | | | | | | | | | | |  
 |  
 Db 2016 -ACTGGGCATTCT-  
 CAATACTTGAATATGGAACATATGCACAGGGGAAGGAAATAACATT 2073  
  
 Qy 1074 GCATATCATTAA-----  
 ACAAATAAAATACTTTTTTAT 1105  
 | | | | | | | | | | | | | | | |  
 | | | | | | | | | | | | | | | |  
 Db 2074  
 GCACCTTTATAAACACTGTATTGTAAGTGGAAAATGCAATGTCTTAAATAAAACTATTTAA 2133  
  
 Qy 1106 -----CACAAAAAAAAAAAAAAAAAAAA 1124  
 | | | | | | | | | | | | | | | |  
 Db 2134 AATTGGCACCATAAAAAAAAAAAAAAA 2158

RESULT 7

US-10-478-914-61/c  
 ; Sequence 61, Application US/10478914  
 ; Patent No. 7335755  
 ; GENERAL INFORMATION:  
 ; APPLICANT: NAKAGAWARA, AKIRA  
 ; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
 ; FILE REFERENCE: 7388-80899  
 ; CURRENT APPLICATION NUMBER: US/10/478,914  
 ; CURRENT FILING DATE: 2003-11-26  
 ; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-162775  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-255226  
 ; PRIOR FILING DATE: 2001-08-24  
 ; NUMBER OF SEQ ID NOS: 417  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 61  
 ; LENGTH: 2437  
 ; TYPE: DNA  
 ; ORGANISM: Homo sapiens

US-10-478-914-61

Query Match 40.9%; Score 2833.5; DB 1; Length 2437;  
Best Local Similarity 38.4%; Pred. No. 1e-167;  
Matches 704; Conservative 0; Mismatches 390; Indels 739;  
Gaps 116;

Qy 2 CCG-----CTGCCA----CCGCA-----  
CCCCGCCA----- 23

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Db 1813  
CCGAGCTCCAGCAATATCCCGAAGTGAAGTAAAGAGTTCATCCACGGCAATTTTGGATTT 1754

Qy 24 -----TGGAGCGGCC--GTC-----GCTGC----  
GCGCCCT 48

|| || | || ||| || || || | || |

Db 1753  
GTGAAATGTCAGATTAATTGAAGAGTCCCAGTCCGTAATTTTTTGCAGCAAAGGTGACAA 1694

Qy 49 GC-----TCCTC---GGCGCCGCTGGGCTGCTGC--TCCTG-----  
CTCCTGC----- 86

| |||| | | ||| || || || || || ||

Db 1693 TCCAGATTCCTCACAAGAC-  
CTGAGCCAATGCTTTCTTGACTTTTTCTTCTGCTTCAC 1635

Qy 87 -----CC-----CTCTCC-----  
TC- 96

|| |||||

||  
Db 1634  
ACAGGTCTTTGTCTACCGTGAGCTCTCCAGTGACAGAATAAATATATATGAGAAGGATCA 1575

Qy 97 ----TTCC-----TCCTC-----TTC----GGACAC-----  
CT 116

|||| ||||| ||| || ||

|  
Db 1574  
GCAGTTCTCTCAGGGCTGTAGTCCTCGTTGGTTCTCTGGGTTACAGGCTTAATCATGGGCA 1515

Qy 117 GCGGC-----CCCTGCGAGC----CGGCCTCC----TGCCC-----  
GCCCT 150

|| || | | || | || ||| || || || ||

|  
Db 1514  
GCAGCTGATTTAACAACGGACATTGCTGACTCCCCAATGCTCTGAAGAAGGAGCCTTT 1455

Qy 151 -----GCC-----CCCGCTGGGCTGCCTG-----CTGGGC-  
GAGA 179

||| ||| || ||| || || || || ||

|  
Db 1454  
CAAAAGCCAGAAAGTTGTCCCACTTGGCAGTCTGTGGGTGTTTCAACGTTTGAGCTGTGG 1395

Qy 180 CCCG-CGACGCGTGCGGCTGCTGCC-----CTATG----  
TGCGCCCGCGGC 220

|| | | | || | || || | || || || | ||

|  
Db 1394  
CCAGTCCAAGCTGGAGGAGGCCACAATGATTCATTAGAGCTTTGAGGTTGTTCTTGAAGA 1335

Qy 221 G-----AGGGC--GAGCCGTGCGGGGGTGGCGGCGCC-----  
 GGC 253  
 | | | | | | | | | | | | | | | |  
 |||  
 Db 1334 GCTGAATATAGGACATGAGCTGTCCCGGTGTGAC-  
 TCTCCCCATACTCATCTTGATTGGC 1276  
 Qy 254 AGGGGGT-  
 ACTGCGCGCC-----G 271  
 | | | | | | | | | | | |  
 |  
 Db 1275  
 AGGTTTTCTCTGCTTGCCGCTTCCACTAGATGTCTCCGAAGTTCCATCACTGCCTCTTTG 1216  
 Qy 272 GGCATGGAGTGC-GTGAAGAGCCGCAAGAGGC---GGAAG-  
 GGT----- 310  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1215  
 TGCTTAGTGTTCAGTAAAGCTTCCCATAGGGCTTTGGCTGTGGTGTCACTGAATTGTGAA 1156  
 Qy 311 --AAAGCC-GGGGCAGCAGC-----CGGCGGTCCGG-----  
 GTGTAAGC- 346  
 | | | | | | | | | | | | | | | | | | | | | |  
 ||  
 Db 1155  
 AGACAGCCTGGTGCAACCACATTATAATTTTCCTCCTCAGTATGGAGTGCAGTGAGCGCT 1096  
 Qy 347 -----GGCGTGTGCG-  
 TGTGCAAGAGC----- 367  
 | | | | | | | | | | | | | | | |  
 Db 1095  
 ATCATGTTAACCATCACATCATTTGTGTGGCCTGGGAGCTGGGGAAGTGCTGAAATGATC 1036  
 Qy 368 --CGCTAC-----CC--GGTGTGCGGCAGCGACGG-----CA-----  
 CC 397  
 | | | | | | | | | | | | | | | | | | | | | |  
 ||  
 Db 1035  
 TTCTCTACTAAGTTGTCTCCATGATGTCCAAGTGTCTCCTGTGAGATCCAGGGTTCTGTCC 976  
 Qy 398 ACCTACCCGAGCGGCTGCCAGCTGCGCGCCGC-----CAGCCAG-----  
 AGGGC- 441  
 | | | | | | | | | | | | | | | | | | | | | |  
 ||||  
 Db 975 ACAAAAACCA-CTGATGCC--  
 CTGCCTGCAGCAGTCTTCTTCCTGTTCTTTGCAGGGGCA 919  
 Qy 442 -----CGAGAGCCGCGGGGAGAAGGCCATCACCCAGG-----TCAGCAAGG-  
 GCACCT 488  
 | | | | | | | | | | | | | | | | | | | | | |  
 |||  
 Db 918 TAATTGGCCAGATCCGC--  
 AGCGATGACCTGACTTAAGGAACCTACAGCAAAACACTCCT 861  
 Qy 489 -GCGAGC-----AAGGTCCTTCCATAG---TGACGCC--  
 CCCCAAGGACATCTGGAATGT 537  
 | | | | | | | | | | | | | | | | | | | | | |  
 ||  
 Db 860 CCCGTACTCCTAAATGTTTACACAGAGAACTGAGGCCTGACACTAGG-  
 CATCTGATCTGC 802

Qy 538 CACTGGTGCCAGGTGTACTTGAGCTGTGAGGTCATC-----  
GGAATCCCGAC---- 585  
| | | | | | | | | | | | | | | | | | | | | |

Db 801 AGCAGCAGCTCTGGGGT--  
TAGCGTAGTGGAGTCCACATCACCCAGGCTTCCCAGCTTCC 744

Qy 586 -----ACCTGTC-----CTCAT-CTGG---  
AACAAAGGTAAAAAGGG 617  
| | | | | | | | | | | | | | | | | | | | | |

Db 743  
TCTTGTCCGGTCGGGCGCTATTAAGGAGGTGCACATCCTGGGGTAGCAGTGGGAAAAGGG 684

Qy 618 GT-----CACTATGGAGTTCAA-----  
AGGACA- 640  
| | | | | | | | | | | | | | | | | | | | | |

Db 683  
ATGCAAAAGCTGGAGTCAAGGCAAAGTGGGGAGCAACAGGGGCAAGCAATAACGGGACAT 624

Qy 641 -GAACTCCT--GCC-----  
TGGTGACCG----- 660  
| | | | | | | | | | | | | | | | | | | | | |

Db 623  
GGAACACCTCGGCCGTGTAGTTCATGTTGCCCATCCATTCACACAGCTTCTCCTCCAGCT 564

Qy 661 ----GGACAAC--CTG--GCCATTAGACCCGG--GGTG--GCC-----CA-  
GAAAAG 700  
| | | | | | | | | | | | | | | | | | | | | |

Db 563  
GCTCGAACACCGGCTGCTGCCCCCTCCATCTCGGCCGCTGCCGCCGCTGGGACATGATTAG 504

Qy 701 C-ATGAAGT----AAC-TGGCTGGGTGCTGGTATCTCCTCTAAGTA-  
AGGAAGATGCTGG 753  
| | | | | | | | | | | | | | | | | | | | | |

Db 503  
CTGTGAGGTGGACAGCGTGGCTCACGGTTGTGACCACCACACAATACTGGAAGTGACTGC 444

Qy 754 AGAATATGAGTGCCATGCATCCAATTCCCAAGGACAGGC--TTCAGCA-----  
TCAG-- 803  
| | | | | | | | | | | | | | | | | | | | | |

Db 443 GGCAGATGATGTCC--  
CGTAGGATCTCCACGGTCCGGCCTTTCAGCAGGCAGCTCAGCA 387

Qy 804 CAAAAATTACAGTGGTTGATGCCTTACATGAAATACCAGT-----  
GAA----A 847  
| | | | | | | | | | | | | | | | | | | | | |

Db 386 CAAACACTGCCTTGG--GCTGCTTGGC-  
TCCACCACCAATTGCGTCGGGCTCGAACTCTC 330

Qy 848 AAAGGTGAAGGTGCCGAGCTATAAA---CCTCCAGAATATTATTAG-  
TCTGCA----- 896  
| | | | | | | | | | | | | | | | | | | | | |

Db 329 GCAGGTGACAGT-  
CAGGGCCCCCACC GCCTCCAGGAGACGGGTGGATCCGCAGCCCCAG 271

Qy 897 ---TGGTT-----AAAAGTAGTCATGGATAACTACATTACCTGTT---



CTT----- 936  
 || | | | | | | | | | | | | | |  
 Db 270 TGCAGGCTCTCGGCGCAGGCGGCTCCAGGTAAACCACA--  
 GCCCGTTTCACTTTGGCCA 213

Qy 937 --GCCTAATAAGTTTCT-----TTTAATCCAATCCAC---TAACACT-TTAGTT--  
 AT 981  
 || | | | | | | | | | | | | | |  
 Db 212  
 GCACCTGCTCCCATCCTTGCTGGGTAAAGGACAGTACGCCCAGGCGCTCATGGTTGGGG 153

Qy 982 ATTCAGTGGTTT----TAC-ACAGAG-AAATACAAAATAAAGATCACA---  
 CATCAAGAC 1032  
 || | | | | | | | | | | | | | |  
 ||  
 Db 152  
 ATTCGCAGACTTGGGAAGTACGGTGCAGGAAGTCTTTTCAGAACTACCGCTTCCGGAA 93

Qy 1033 TAT---CTACAAAAATTTATTATA-TATTTACAGAAGA-  
 AAAGCATGCATATCATTAAAC 1087  
 | | | | | | | | | | | | | | | |  
 |  
 Db 92 ATTGGGCTCCGGGAGACTTTGACAGTCTCCACAGTACACCCAGTAGGCC-  
 AACAGTGCTC 34

Qy 1088 AAATAAAATAC----TTTTTATCACAAAAAAA 1116  
 | | | | | | | | | | | | | |  
 Db 33 GAG-GAATTCCGCAGCTTTTAGAGCAGAAGTAA 2

RESULT 8  
 US-10-478-914-17/c  
 ; Sequence 17, Application US/10478914  
 ; Patent No. 7335755  
 ; GENERAL INFORMATION:  
 ; APPLICANT: NAKAGAWARA, AKIRA  
 ; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
 ; FILE REFERENCE: 7388-80899  
 ; CURRENT APPLICATION NUMBER: US/10/478,914  
 ; CURRENT FILING DATE: 2003-11-26  
 ; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-162775  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-255226  
 ; PRIOR FILING DATE: 2001-08-24  
 ; NUMBER OF SEQ ID NOS: 417  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 17  
 ; LENGTH: 2198  
 ; TYPE: DNA  
 ; ORGANISM: Homo sapiens  
 US-10-478-914-17

Query Match 40.5%; Score 2800; DB 1; Length 2198;  
 Best Local Similarity 37.8%; Pred. No. 9.5e-166;  
 Matches 685; Conservative 0; Mismatches 405; Indels 720;  
 Gaps 98;

Qy 1 GCCGCTG-----CCACC-----GCACC-CCGCCATGGA-----

GCGGC 32

Db 1881 GCC-  
CTGAGGAAGCACCACCAGAGGGAGGAGCTCCACCACCAGGAAATCCCCCAGGCATT 1823

Qy 33 CGTCGCTGCGCGC--CCTGCTCCTCGGCGCCGCT-----GGGCTGC-----  
TGC 74

Db 1822  
CCTCCTGGCATGCCTCCTGCACTCTGGTACAGCTTGGTGATGATGGGGTTGCAAACCTTC 1763

Qy 75 TCCTGCTCCTGC-----  
CCCTCTC----- 93

Db 1762  
TCCAGCTCTTTCTGTTGATGTTCAAATTCTTCCTTCTCAGCAGTCTGATTCTTATCAAGC 1703

Qy 94 -----CTCT--TCC-----  
TCCTCTTCG----- 109

Db 1702  
CAGTTGATAATTTCACTTGTCCAGAATCTTCTGTTTGTCTCATCGTTAATCTTG 1643

Qy 110 ----GA-----CACCTGCGGCCCTGC-----GAGCC---  
GGCCTCCTG---- 141

Db 1642  
CCTTGAAGTTTCTCATCTTCAACAGTTGCTTTTCATGTTGAAGGCATAGGACTCAAGTGAA 1583

Qy 142 -----CCCGCCCCTGCC-----CCGCTGGG-----  
CTGCCTGC 170

Db 1582  
TTCTTGATGACACCTTGTCCCTCTGCTTCTCATCTTCAGCTTTGTACTTCTCAGCTTCC 1523

Qy 171 TGGGCGAGACCCGCGACG-----  
CGTGCGGCTGCTGCCCT----- 205

Db 1522  
TGGACCATACGTTCAATGTCTTCTTGCTCAAACGGCCCTTGTCATTAGTGATAGTAATC 1463

Qy 206 ATGTGCGC-----CCGCGGCGAGGGC---GAG---  
CCGT----- 233

Db 1462  
TTGTTCTCTTTTCCCGTACTCTTGTCCACAGCAGAGACATTGAGTATACCATTGGCATCA 1403

Qy 234 ---GCGGGGGTGGC-----GG--CGCC-----GGCAGGGGGTA---  
CTG----- 264

Db 1402  
ATGTCAAAGTGACTTCAATCTGAGGAACACCTCGGGGTGCAGGAGGTATGCCTGTGAGT 1343

Qy 265 -----CGCGCCGGGCATGGAGT-----  
GCGTGA 287

Db 1342

TCAAACTTGCCAAGCAGGTTGTTATCCTTTGTCATGGCACGCTCGCCTTCATAAACCTGA 1283

Qy 288 AGAGCCGCAAGAGGC-----  
GGA 305  
| | | | |  
| | |  
Db 1282  
ATAAGCACACCAGGCTGGTTGTCAGAATAGGTAGTGAAGGTCTGTGTCTGCTTGGTAGGA 1223

Qy 306 AGGG-----TAAAGCC-----GGGGCAG-----CAGCCGGCGGT-----  
CCGGGT 340  
| | | | | | | | | | | | | | | | |  
|  
Db 1222  
ATGGTGGTATTACGCTTGATGAGGACAGTCATGACTCCACCAGCAGTTTCAATACCAAGG 1163

Qy 341 GTAAGCGGCGTGTGCGTGTGCAAGAGCCGCTACCCGGTGTGCG---  
GCAGCGACGGCACC 397  
| | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1162 GAAAGAGGAGTG---ACATCCAAGAGCAGCAAATC-  
TTGAACATTCTCAGACTTGTCTCC 1107

Qy 398 --AC-----CTACCCGAGCGGCTGC-----CAGC-----  
TGCG 423  
| | | | | | | | | | | | | | | | |  
| | |  
Db 1106  
AGACAAGATGGCTGCCTGGACAGCTGCACCATAAGCAACAGCTTCATCAGGGTTGATGCT 1047

Qy 424 CGCCGCCAG-----CC-----AGAGGGCCGAGAGCCGC-----  
GGGGAGAAG 460  
| | | | | | | | | | | | | | | | | | | | |  
|  
Db 1046  
CTTATTCA GTTCTTTTCCATTGAAGAAGTCTTGGAGAAGCTTCTGAATCTTGGGGATACG 987

Qy 461 -----GCCATCACCCAGGTCAG-----CAAG---  
GGCACCTGC 490  
| | | | | | | | | | | | | | | | | | | | |  
|  
Db 986  
AGTAGAACCAACCAACCAGGACAATATCATGAATCTGTGACTTGTCTAGTTTGGCATCT-C 928

Qy 491 GAGCAAGGTCCTTCCATAGTGACGCC-----CCCC----AAGGACA----  
TCTGGAATG 536  
| | | | | | | | | | | | | | | | | | | | |  
|  
Db 927 G---  
AAGGGCTTTCTCTACTGGGTCCAGGGTGCCACGGAACAGGTCAGCATTCA GTTCTT 871

Qy 537 TCACTGGTGCCAGGTGTACTTGAGCTGT-  
GAGGTCATCGGAATCC----- 581  
| | | | | | | | | | | | | | | | | | | | |  
Db 870 CAAATCGGGCACGG--GTAATGGAGGTATAGAAGTC----  
GATTCTTCATAGAGAGAAT 817

Qy 582 CGACACCTGTCCTCATCTGGAACAAGGTAAAAAGGGGTCACT-----  
ATGGAG 629  
| | | | | | | | | | | | | | | | | | | | |

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Db 116
CGATCTCAATACTGGCCTGGGTGCTGGAAGAGAGGGGTACGCTTAGCACGTTTACAAGCAG 757

Qy 630 TTCAAAGG-----ACAGAACTC-----
CTGCCTGGTGACCGGGACAACCTGGCCATTCA 678
| | ||| |||| ||| || ||| || || | || || ||
|
Db 156
TACGGAGGCGTCTTACAGCTCTCTTGTCTCTACTGATGTCCTTCTTATGCTTGCGCTTAA 697

Qy 679 GACCCG-----GGGTGGCC---CAG-----AAAAGCAT-----
GAAGT 708
| | ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
||
Db 696
ACTCAGCAATAAAATGGTTGACCATTCGGTTGTCAAAATCTTCTCCACCCAAGTGGGTGT 637

Qy 709 AACTGGCTGGGTGCT-----GGTATC--TCCTCTA-AGTAAGGA-
AGATGCTGGAG 755
| |||| || | || |||| | ||| |||| || |
Db 636
CTCCAGCTGTAGACTTGACCTCAAAGATTCCATCCTCAATAGTGAGGATTGACAC----- 582

Qy 756 AATATGAGTGCCATGCATCCAATTCCCAAGGACAGGC-----
TTCAGCATCAGC--- 804
| | ||||| | ||| | ||| || || ||| || || |
Db 581 ATCAAAAGTGCCAC-CTCCCAGGT--
CAAAGATGAGCACGTTTCTTTCTGCTCCAACCTT 525

Qy 805 -----AAAAATTACAGTGGTTGATGCCTTACATGAAATAC-----
CAGT 843
| ||| ||| | | ||| || ||| || ||| ||
|
Db 524
TTTGTCTAAGCCGTAAGCAATAGCAGCAGCAGTTGGCTCATTAATAATTCTAAGTACATT 465

Qy 844 GAAAAAAGGTGAAGGTGCCG-AGCTAT--AAACCT--C-
CAGAATATTATTA----- 889
|| | || || | | | | | ||| | | |||
Db 464
GAGACCAGCAATAGTTCCAGCATCTTTGGTAGCCTGACGCTGAGAGTCATTAAAGTAAGC 405

Qy 890 -----GT-----CTGCATGGTTAAAAGTAGT--CATGGATAACTAC----
ATTACCTG 931
|| | |||| | ||| ||| | ||| || || | ||| ||
Db 404
TGGCACTGTGACCACAGCATTGGTAACAGTCTTCCCAAGGTAGGCTTCTGCAATTTCC-- 347

Qy 932 TTCTTGCTAATAAGTTTCTTTTAATCCA-ATCCACT-----
AACACTTTAGTTATATTTC 985
||| | | | | || | | || || ||| || | |||| | | |
||
Db 346 TTCAT-CTTTGTCAGAACCATAGAAGACACCTCCTCTGGATAGAAGCTTTTGGTCTC-
TC 289

Qy 986 ACTGGTTTTACACAGAGAAAT-----
ACAAAATAAAGATC----- 1020
|| || || || || | || ||||| |
Db 288

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CCTTGTATTCTACTTGGACCTTGGGCCTGCCAGCATCATTACCACCATAAAGGGCCAAT 229

Qy 1021 ---ACACATCAAGACT-ATCTACAAAAATTTATTATATATTT----  
ACAGAAGAAAAGCA 1072

|| ||| |||| | || | | || | ||| |  
|||

Db 228 GTTTCATATC-  
AGACTGGACAACAGCATCATCAAATCTGCGTCCAATCAGACGTTTGGCA 170

Qy 1073 TGCATA-----TCATTAAACAAATAAAATACTTT---  
TTATCACAAA 1112

| || | |||| || | || |||| ||||  
|

Db 169 T-CAAAAACGTGTGTTGGTGGGGTTCATT--GCAACT-  
TGATTCTTTGCGGCATCACCGAT 114

Qy 1113 AAAAAAAAAA 1122

|| |  
Db 113 CAACCGTTCA 104

#### RESULT 9

US-10-478-914-21  
; Sequence 21, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 21  
; LENGTH: 3589  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-21

Query Match 40.4%; Score 2795; DB 1; Length 3589;  
Best Local Similarity 39.2%; Pred. No. 1.7e-164;  
Matches 742; Conservative 0; Mismatches 347; Indels 806;  
Gaps 121;

Qy 1 GCC-GCT-----GCCACC-----  
GCACCCCGCCATGGAGCGGCCGTCGCTGCGCGCCCT 48

||| || |||| | |||| | || | || || ||| ||  
|||||||

Db 1 GCCTACTGGATTGCCATCATTTTGCACACTGCGA-GGGGC-TCCGT--  
GTGTGCGCCCT 56

Qy 49 G-CTCCTCGGCGCCG--CTGGGCTGCTGCTCCTGCTCCTGCC-CCTCT-----  
CCTCTTC 99

| || || | |||| || | | || | ||||| || || || ||

|  
Db 57 GICTTGTCTG-  
GCCGTCTCATCCCTTCCCCACCCCTGCCGCCACTCCGACCCGCTCC 115

Qy 100 -----CTCCTCT----TCGGACACCTGCGGCC--CTGCGAGCCGG--CCTC-  
CT- 140  
|| | | ||| | | ||| ||| | | |

||  
Db 116  
CAAAGTGGCTTCACAATAGTCGGTCCTCGGCGGTGTAGGCTGCGCACCAGGTCCACACTT 175

Qy 141 -----GCCCCCCC-----CTGCCCCCGCTGGG-----  
CTGC--- 166  
| | | | | | | | | | |

Db 176 AAGCGAAATCAAGGAGACC-  
CCCTTCTACTTCTACCTTTGGGTTTGGTGCTCAATGCGAA 234

Qy 167 -CTGCTG-GGCG-AGACCCG-----  
CGACGCGTGCGG----- 195  
||| | | | | | | | |

Db 235  
GCTGCTGCAACTCAGACACGCCTAAGTCAACTCATGCAGAAAAAGGAGAAAAGTTTTGGT 294

Qy 196 ---CTGCTGCCCTATGTGC-GCCCGCGGCGAGGGCGAGCCGTGCGGGGG---  
TGGCGGC- 247  
| | | | | | | | | | | | | | |

||  
Db 295 ATACAAATGCTCTCAGTCCAGCCAGACAC-----  
CAAGCCGAAAGGTTGTGCTGGCTGCA 349

Qy 248 GCCGG-----CAGGG---GGTA-CTGC-----GCGC-----  
CGGGCATGGAG--T 281  
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|  
Db 350  
ACCGAAAGATCAAGGACCGGTATCTTCTAAAGGCACTGGACAAATACTGGCATGAAGACT 409

Qy 282 GCGTGAAG-----AGCCGCAAGAGGCGGAAGGG-----  
TA 311  
|| | | | | | | | | | | |

||  
Db 410  
GCCTGAAGTGTGCCTGCTGTGACTGTGCTTGGGGGAGGTGGGCTCCACCCTGTACACTA 469

Qy 312 AAGC-----CGGGGCAGCAGCCGGCGGTCC--GGGTGT-----  
AAGCG 347  
||| | | | | | | | | | | | |

|  
Db 470  
AAGCTAATCTTATCCTTTGTGCGCAGAGACTATCTGAGGCTCTTTGGTGTAACGGGAAACT 529

Qy 348 GCGTGTGCGTGT-GCAAGAGC--CGCTACC-----CGGTG-TGCG-  
GCAGCGACGGC- 394  
|| | | | | | | | | | | | | | |

|  
Db 530 GCGC-TGCCTGTAGTAAGCTCATCCCTGCCTTTGAGATGGTGATGCGTG-  
CAAGGACA 586

Qy 395 -----ACCACCT-ACCCGAGCGGC-  
TGCCAGCTGCG----- 423

Db 587  
 ATGTTTACCACCTGGACTGCTTTGCATGTCAGCTTTGTAATCAGAGATTTTGTGTTGGAG 646  
 Qy 424 -CG-----CC-----GCC--AGCCAGAGGGCCGAGAGCCGCGG--  
 GG- 455  
 ||  
 Db 647 ACAAATTTTTCCTAAAGAATAACATGATCCTTTGCCAGACGGACTA----  
 CGAGGAAGGT 702  
 Qy 456 -----AGAAGGCCAT-CA-CCCAGGT---CAG-----  
 CAAGGGCACC----- 487  
 ||  
 Db 703  
 TTAATGAAAGAAGGTTATGCACCCCAGGTTGCTGATCTATCAACATCACCCCATTAAAGA 762  
 Qy 488 -TGC-GAGCAAGGTCCTTCCATAGTGAC-----  
 GCCCCCAAGGACATCTGGAATGTCA 539  
 ||  
 Db 763 ATACAGAGCAC--TACATTCTTT-  
 TATCTTTTTTGCTCCACATGTACATAAGAATTGACA 819  
 Qy 540 CTGGTGCC-----CAGGTGTACTTGAGCTGTGAGGTCATC-  
 GGAATC----- 580  
 ||  
 Db 820  
 CAGGAACCTACTGAATAGCGTAGATATAGGAAGGCAGGATGGTTATATGGAATAAAAGGC 879  
 Qy 581 --CCGACACCTGT-----CCTCA--  
 TCTG-----G 601  
 |  
 Db 880  
 GGACTGCATCTGTATGTAGTGAAATTGCCCCAGTTCAGAGTTGAATGTTTATTATTAAAG 939  
 Qy 602 AACAAGGTAA-----AAAGGG-----  
 GTCAC--- 622  
 ||  
 Db 940  
 AAAAAAGTAATGTACATATGGCTGGATTTTTTTGCTTGCTATTCGTTTTTGTGTCACTTG 999  
 Qy 623 -----  
 TATGGAGTTCAAAG 636  
 ||  
 Db 1000  
 GCATGAGATGTTTATTTTGGACTATTGTATATAATGTATTGTAATATTTGAAGCACAAAT 1059  
 Qy 637 G---ACAGAACTCCTG-----CC--TGGTG-  
 ACC----- 659  
 ||  
 Db 1060  
 GTAATACAGTTTTATTGTGTTACCATTTGTGTTCCATTTGCTTCTTTGTATTGTTGCATT 1119  
 Qy 660 -GGGACAACCTG-----GC-----CATTGAG-----  
 ACCCG----- 684  
 ||  
 Db 1120

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TAGTACAATCAGTGTTTAAACTTACTGTATATTTATGCTTTTCTGTATTACCAGCTATTT 1179
Qy          685 -----GGGTGG-----
CCCAG 695
| | |
Db          1180
TAAATGAGCTGTAACTTTCTAGTAAAAGAATTGAAAAAGCAAATCTCACTAATGATACACAG 1239
Qy          696 A-----AAAGCATG-----
AAGTA ACTGGCTGGG-- 719
|         ||||| |           |||  ||   | |
Db          1240
ATAGATAAAAGCAAGTCTATCAACATTAAAAATACTAAAAAATAAAGACACACACAGAGCA 1299
Qy          720 TGCTGGTATC-TCCTCTAAGTAAGGAAGAT----GCTGGAGAATATGAGTG-
CCATG---- 770
|   | | |   | | | | | | | | | | | | | | | | | | | | |
Db          1300
TTTTAGTGACATCCACTACTTATTGCCGCTATGAGTTAGAGTCTATCAGTGTTCTTGTTA 1359
Qy          771 ---CATCCAATTCCCAAGGACAGGCTTCAGCATCAGC---
AAAAATTACAGTGG----- 818
|   | | | | | | | | | | | | | | | | | | | | |
Db          1360 TAACCCCTATTTTTCAGG-----
GGGT TAAAAATCAGCTTTAAAAAAAATACATAAAAAATTT 1415
Qy          819 ----TTGATGC-
CTTACATGAAATACCAGTGAAAAAAGGTGAAGGTGCCG----- 863
| | | | | | | | | | | | | | | | | |
Db          1416 CATCTTAAAGCACTTTTCATTTTATACCAACGTGAAAA-----
GTGCCATTTTTAGAAAT 1468
Qy          864 AGCTATAAACCT--CCAG-----AATA----TTATTAGTCTGC---
ATGGTTAAA 904
| | | | | | | | | | | | | | | | | | | | |
|
Db          1469
AACTTTAAAGCTTAAACAGGTTTCCTTTTAATATCCTTTTTTTGTGTGCTCTTTACTTACA 1528
Qy          905 AGTAGTCATGGAT-----AACTACA----TTACCTGTTCT--
TGCTTAATAAGTT 948
| | | | | | | | | | | | | | | | | |
| |
Db          1529 CAATGGCTTTGTTTTGCTTTTTTCAGCCACACCCCTTATGTGAACTAGTGCCT-
TTGGGTA 1587
Qy          949 TC-----TTTAAATCCAA-----TCCACTAACACTTTAGTTA-----
TATTCACTG 989
| |         |||  |||||   | |   ||| | | | ||||   |||
| |
Db          1588 TCACGTAAAAATTTTTTCCAAAGGGTTACTTTAAAAATCT-
GTTACCACAATTATGAGATG 1646
Qy          990 GTTTTACACAGAGAAATACAA-----AATAA-----
AGATCACACATCAAG 1030
| | | |   |   | | | | | | | | | | | | | | |
| | | |
Db          1647
ATTTTTAAGTGATAAAATTAACCTTCTTCTTGATATAAATTCTGCCAGATCTCTCCACAAG 1706

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Qy      1031 A-CTAT---CTACAAAATTTAT-----TATATATTT---ACAGAAGAAA----
AGCA 1072
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Db      1707
AGCTGAGGGTTTCATAACTTTTATGGCTTAATAAATGTATGACACTGAAAAGATTTGAGTG 1766

Qy      1073 TGCAT-----ATCATTAAA---
CAAATAAAA----- 1095
          |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
Db      1767
TGAATCTACTGAAATCACTATAATGCACATTGAAGCTATGATGGTATTTGAGTAGTGAGG 1826

Qy      1096 -TACTTTTTATC-----ACAAAAAAAAAAAAAAAAA 1123
          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
Db      1827 TTACTTTTGATCGGAGCAACATAATGCTCATAGAA 1861

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# RESULT 10

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US-10-478-914-62
; Sequence 62, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 62
; LENGTH: 1946
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-62

```

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Query Match          39.7%; Score 2747; DB 1; Length 1946;
Best Local Similarity 40.7%; Pred. No. 1.5e-162;
Matches 667; Conservative 0; Mismatches 424; Indels 548;
Gaps 88;

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Qy      1 GCCGCTG-----CCACCGCACCCCGC----
CATGGAGCGGCCGTCGCT 39
          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |
Db      259 GCAGATGGCATGTGTCTGTGACAACCTCTGCTCTCCACATCTCTTGGGCCTGTTTAC-
CT 317

Qy      40 GCGCGCCCTGCTCCTCGGCGCCGCTGGGCTGCTGCTCCTG---CTCCTGCCCC-
TCTC-C 94
          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|
Db      318 GCGCTCCAGAGCCT-----CCGC----CAGCATC-
CCAGAATCTCCATCCCCATCTCTC 367

```

Qy 95 TCTTCCTC-CTCTTCGGACACCTGCGGCCCT--GC-GAGCCGGCCTCCT-----  
GCCCG 145  
| | | | | | | | | | | | | | | | | | | | | |

Db 368  
ACTTATACACACATCAGTCATCGGTTATCCATTAGCTAAACCGCCTTCCTTAATAGCTTT 427

Qy 146 CCCC-----TGCCCCGCTGG-----  
GCTGC----- 166  
| | | | | | | | | | | | | | | | | | | | | |

Db 428  
ACACTGTTTGTCTTCTCTGGAACATTTTTAGTTAAATTTTCATAATGCAGTTGCACACAA 487

Qy 167 -----CTGCTGGGCGAGACCCGCGACGCGT-----  
GCGGCTGCTGCC 203  
| | | | | | | | | | | | | | | | | | | | | |

Db 488  
ATGAAGACACAGATGGCTGCATCCTCCGTCTCTTCCCCTCGTTTACAGGAAGCTGCGGAT 547

Qy 204 CTATGTGCG-----CCCGC--GGCGAGGGC-GAGCCGTGCGGGG-----  
GT- 241  
| | | | | | | | | | | | | | | | | | | | | |

Db 548  
CAGGGAGGGGTGTTAGGGTTACCCACATGGTAAGGGCAGAGACAAGAGGGGACCCAGTT 607

Qy 242 -----GCGGCGC-----CG--GCAGGGG-----  
GTACTGCGCGCCGGGCATGGA 279  
| | | | | | | | | | | | | | | | | | | | | |

Db 608 TTCCATGCTGCACATGGTCATTGCTGGGGACTGAGGTTTGCACATCAC-  
CCTGCCCTGTT 666

Qy 280 GTGCGTGAAGAGCCGCAAGAGGCGGAA-----GGGTAAAGCCGGGGCAGCAGC--  
CGGCG 332  
| | | | | | | | | | | | | | | | | | | | | |

Db 667 CTCCCT-----CCGC-TGGGGAGAAAGTCAGGGATGGAGC--  
AAGCTGCAGCATCTTCT 717

Qy 333 GTCCGGGTGTAAGCGGC---GTGTGCGTGT-----GCAAGAGCCG-CTACCC--  
GGTGT 380  
| | | | | | | | | | | | | | | | | | | | | |

Db 718  
GAAAAAGAAAAGGTGGCCTTGTCTCCAGGTCTCCCCTCAAGTCCCACCTTCCCATAGTTT 777

Qy 381 GCGGCAGCGAC-----GGCAC-----  
CACCTA 402  
| | | | | | | | | | | | | | | | | | | | | |

Db 778  
TCTGCCACTTCTCTTGATTTTCTCTCTGCCACTTCTCTTGATTTTCTCTCTGCCACTT 837

Qy 403 CCC--GA-----GCGGCTG-----CCAGCTGCGCGC---  
CG 428  
| | | | | | | | | | | | | | | | | | | | | |

Db 838  
CTCTTGATTTTCTCTCTGCAGCTGCTTTGAGGTGGGTTTTCTCCAGATGCACACTTTCC 897

Qy 429  
CCAGCCAGAGGGCCGAGAGCCGCGGGGAGAAGGCCATCACCCAGGTCAGCAAGGGGCAC-- 486  
|| || | || | || |||| || || || |||| ||  
Db 898 CCTGCTTTGCGTCCTTATTCT--  
GGTAGAAGCACAATCTAAAGCTCATTAAAGGGAACATA 954  
  
Qy 487 ----CTGC-GAGCAAGGTCCTTCCATAGTGACGCCCCCAAGGACATC-----  
TGGAATG 536  
| | | || | || | | || | | | | | | | | | | |  
|  
Db 955  
ATCAATTCTGTGCATGGCGCTAGCTCAGCAGATCACACACAGGCAGCACTATTAGCAAG 1014  
  
Qy 537 TCACTGGT--GCCCAGGTGTACTTGAGCTGTGAGGTCATCGGAATCCCG-----  
ACA-- 586  
|| || | | || | | |||| | ||| || | | |||| |||  
Db 1015 TCGGTGCTTAACACATG-GCACTT--  
CCATGAATCGATATGGAGCCCGTGTAGAACAAG 1070  
  
Qy 587 -CCTG-----  
TCCTCATCTGGAACAAGGTAAAAAGGGGTCACTATGGAGTTCAAAG-- 636  
| || | || | || | || | || | | || | | || | ||  
Db 1071 GCATGGGTTTTTTTCTCTTCC-  
CATTAAAGAAAACTGATGCCAAAAATAACTTCTCAGAT 1129  
  
Qy 637 -----GAC-----  
AGAACTCCTGCTGGTGACCGGGACAACCTGGC 672  
|| | || | | | | | | | | | | | | | |  
|  
Db 1130 ATTTTCAAGTATGACTTTTATGAAGGGAAAAAGCATTTTTTGTGTTGCAAAATCATGCT-  
TC 1188  
  
Qy 673 CATTGAGACCCGGGGTGGCCCAGAAAAGCAT-----  
GAAGTAACTGGCTGG 718  
| ||| || | || | || | | | | | | | | | | |  
||  
Db 1189  
AGTGCAGGCCAGTTGTGAATTGTGATGGCTTTTATTTCTCCTGGGGCTGTAACTTTAAGG 1248  
  
Qy 719 GT-----GCTGGTATCTCCTCTAAG-TAAGGAAGATGCTGGAGAATATGAGTGC-  
CATG 770  
|| ||| | | | | || ||| | || | | | | | | |  
||||  
Db 1249  
GTTTAGAATTTGGAACCACAGCCTAGCTAATCATGACACACACACACACACACATG 1308  
  
Qy 771 CATCCA-ATTCCCAAGGAC-AGGCTTC----AGCATCA-  
GCAAAAATTACAGTGGTT--- 820  
|| || || | || | || | || || || | || | || | ||  
Db 1309  
CACACACATACACATACACAAAGCATCACGAAGAACCATACAAATTGTACATTATTTTAC 1368  
  
Qy 821 ----GATGC-----CTTACATGAAATACCAGT-----  
GAAAAAAGGTG---- 854  
|| || || | || | || | || | || | || | || | ||  
Db 1369 ACATGGAGGCTCACTCTAAAAT-  
AGATAACCATTTTAAATATTAATAAACTTGTGCTCA 1427  
  
Qy 855 -----AAGGTGCCGAGCTATAAACCTC-----  
CAGAAT-----A 883

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|
Db      1428
TTGTATGTTTCATTCTATATGTACTGATTTGTTATTTCACATTTCTTTCAAATCGTTCAA 1487

Qy      884 TTATTAGTCTGCATGGTTAAAAGTAGTCATGG--
ATAACTACATTACCTGTTCTTGCCTA 941
|
Db      1488 TTTCTAGCCACATCAATTAAA-TATTAATAGTACTTTCTACA-
AACATGAGCGCACAAA 1545

Qy      942 ATAAGTT----TCTTTTAAATCC-----AATCCACTAACACTTT---
AGT-- 978
|
Db      1546
ATAAATTCAAATCTATTTTTCCCACTGGTGTATCAATACTGCTCATACTTTGTCAGTAA 1605

Qy      979 -TATAT-TCAC-TGGTTTTA-----CACAGAGAAATA-----
CAAAT- 1013
|
Db      1606
CTAAGTATCACATGATCTTAAACTAATGTACATACTAAAAAGCTTCTGAGGCAAATTG 1665

Qy      1014 ---AAAGATCACACATCA-----
AGACTATCTACAAAATTTATTATATATT 1057
|
Db      1666
TAGAAAGAACTCTCAACATCATTGTTCTACTGGACAACATACATAAAATTATTTTACAGT 1725

Qy      1058 TACAGAAGAAAAGCATGCATATCAT--TAAA-----
CAAATAAAATA----- 1097
|
Db      1726
GATGGGAGAGAAATAGGCTCCTCATCCTAAAAGCTGCGAAGACAGTAGCGGTGCCGTGTT 1785

Qy      1098 -----CTTTTT-
ATC- 1106
|
Db      1786
TTGGCGTTACTCCCCTGTGGATCCCAGCGACGGGTGGATTTCTCCTGTGCTTTATCATCA 1845

Qy      1107 -ACAAAAAAAAAAAAAAAAA 1124
|
Db      1846 GACACAAAATGGACCAAAA 1864

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RESULT 11

US-10-478-914-57

; Sequence 57, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 57  
; LENGTH: 2336  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-57

Query Match 39.1%; Score 2704; DB 1; Length 2336;  
Best Local Similarity 36.3%; Pred. No. 2e-159;  
Matches 687; Conservative 0; Mismatches 408; Indels 796;  
Gaps 97;

Qy 1 GCCGCTG----CCAC-CGCAC-----CCCGC-----CATG--  
GAGCGGCCGTCGCTG 40  
|| || | || | |||| || | | |||| |  
||||  
Db 29  
GCTGCGGAATTCTCGAGCACTGTTGGCCTACTGGAATGCGAGCTGAGCAGACAGGGCTG 88

Qy 41 C-----GCGC---CCTGCTCCTCGGC--  
GCCGCTGGGCTGCTGCTCCTGCT--- 81  
| |||| | || |||| | | | || |  
Db 89 CAAGGAAATCTGGCGCGGTTCAATACCTCGTCTAGC--  
CTGGGTTCCAGTATCTAATTTT 146

Qy 82 -----CCTGCCCCTCTC----  
CTC----- 96  
||| | ||| |||  
Db 147  
TTTTTTGTTTTAACTGACAACTCATTTCTCTACTGGGACAGGATGCTGTGCTGGCTGGA 206

Qy 97 --TTCC-----TCCTCTTCGGACA-----  
CCTGCGGCCCTG 126  
||| |||| | ||| | ||| ||| |  
|  
Db 207  
AGTTCCATTTCTACAGCAAGAATCCTATCTGGAAACACAGAAGTTGTCCTCTAGCCACAG 266

Qy 127 -----CGAGC-----CGGCCTCCTGCC--  
CGCCCCTGCCCCC----- 156  
||| | | || | || | ||| |||  
Db 267  
CAGCTCGAACTTTTTTGATTGTCGTTGCTGCTTTCTCCCATCACCCCATCCCCTTTTGA 326

Qy 157 -----  
GCT 159

||  
Db 327  
CAAAGATCCAAGTGTAAAAAGTCTTACGTAACAGTTCAGGACTACTTCGGTTCTTTTACT 386

Qy 160 GGG-----CT----GCC-----  
TG 169

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      |||
||
Db      387
GGGTAAGCACTTTCAATTTTTTTTTTTAACTAAAAGCCATTTTAAAATTGAATCTGTTG 446

Qy      170 CTGGGCGAGAC-----
CCG----- 183
      |||  |||
Db      447
AGGGGCTTGACTAAAATCTTTTAAGTAATTTGTGTAATGGAATACTGTCAGTGGAATTTTT 506

Qy      184 -CGACGCG-TGCGGCTGCTGC-CCTATGTGCGC----
CCGCGGCG----- 221
      || | | | | | | | | | | | | | |
Db      507
TCGTCTCATTCTGCACGTGCTCCTTTGTTCTCAGAACAGAAGCTTTTTATACACATCCC 566

Qy      222 AGGGCG-AGCCGTGCGGGGGTGGCGGCGCCGG-----
CAGGGGGTACTGC 265
      | | | | | | | | | | | | | | | |
Db      567 ATAACGCAGCTG-
GAGAGAGTTATGAAGTCAGTTATTATAAGGAACACAAAGTTGCTTT 625

Qy      266 GC-----GCC-----
GGGCATGGAGTGCGTGAAGAG 291
      |      |||
      |||
Db      626
CCATTCTTTGCCTTTAGATAATTAATTTTTTTGTTTTCTTAAAATGGAGTATTTAAAGAA 685

Qy      292 -----CCGCAAG----AGGCGGAAGG-----
GTAAAG----- 314
      | ||| | | | | | | | |
Db      686
GGAAGAAATTCACAAGAAATAAACTGTTGGAGAATTTAGAAAAGTTTGAAGTTTTTACCA 745

Qy      315 CC-----GGGGC-----AGCAGCC---
GGCGGTCCGGGTG 341
      ||      | |||      || ||| ||||| |||
|
Db      746 CCTTTTCTATCTCTAGTTTTGTGTGGCCAAACACTTGTGCCGCCTGGGGCGGT--
GGGGG 803

Qy      342 TAAGCGGCGTGTGCGTGTGCA-AGAGCCGCTA--CCCGGTGTG-----CGGCA-
GCGACG 392
      | || ||| || | || ||| ||| || | || ||| | |
|
Db      804 T-AGAGGC--
AAGCATAGACAGAGAGGAACTAAGCCAGACATGGACAAAGGCACGAGCCA 860

Qy      393 GCACCA-----CCTACCCGAGCGGCT-GCCAGCTGCGCG-----
CCGCCAGCCA 435
      |||| ||| ||| || ||||| | | | | |||||
Db      861
AAACCAGACAGTCTGGCCGTTTCGATAGGCCAGCAGTGGGTGAGACAGGTCAGCCAGCTG 920

Qy      436 GAGGGCCGAGAGCCGCGGGGAG---AAGGCCATCACCCAGGTCAGCAAGG-
GCACCTGCG 491
      |||| || |||| | |||| | | || ||| | | | ||| || |
      ||||

```

[illegible]





; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 20  
; LENGTH: 2495  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-20

Query Match 39.0%; Score 2697.5; DB 1; Length 2495;  
Best Local Similarity 34.5%; Pred. No. 7.1e-159;  
Matches 728; Conservative 0; Mismatches 390; Indels 995;  
Gaps 109;

Qy 1 GCCGCTG-----CCACCGCAC-----  
CCCCGC----- 22  
||| || | || | | | | |||  
Db 349  
GCCAATGTGGAATACTACTACAGAGCAATACAGTTCTACTTAGAATTCAAGCCTCTGTTG 408  
  
Qy 23 -----ATGGAGCGGCCGTCGCTG-----CGCGCCC-TGC--  
TCC----- 53  
||| || | | | | | | | ||| |||  
Db 409  
TTAAATGATTTGCTGATGGTGCTGTCTCCACGGTTGGATCACACTCGTGCAGTCAATTAT 468  
  
Qy 54 -TCGGCGCCGCTGGGCTGCTGCTCCTGCT----CC-----TGC-----  
CCCT 90  
||| || | | | ||| | ||| | || ||| |||  
|  
Db 469  
TTCAGCAAGGTTAAACAGCTACCACTGGTGAAACCGTATTTGCGTTTCAGTTCAGAACCAT 528  
  
Qy 91 CTCCTC-----TTCC-----  
TC-- 102  
| | | | | ||| ||| |||  
Db 529  
AACAACAAATCTGTGAATGAATCATTGAACAATCTTTTTATTACAGAAGAAGATTATCAG 588  
  
Qy 103 -CTCTTCGGACACC-----TGC----GGCCCCT-----GCGAGC-  
CGGC-- 135  
||| || ||| | ||| | | || ||| ||| |||  
Db 589  
GCTCTGCGAACATCAATAGATGCTTATGACAACCTTTGACAATATCTCGCTTGCTCAGCGT 648  
  
Qy 136 -----CTC-----CTGCCCCGCCCT-----  
GCCCC 155  
||| ||| | || |||  
|  
Db 649  
TTGAAAAACATGAACTCATTGAGTTCAGGAGAATTGCTGCTTATCTCTTCAAAGGCAAC 708  
  
Qy 156 ---CGCTGG--GCTGCCT-----GCTGGGCGAGACCCGCGACGCGTGC--  
GGCTGCTGCC 203  
||||| | | | ||| || ||| | | | ||| |||  
Db 709



||  
 Db 1306  
 CTTTTTGTCTTAACCTATAAACTTGGATCACCTATGTTAAAACCTTATTTACATTCCAC 1365  
  
 Qy 527 ATC----TGGAATGTC-----ACTGGTGCCAGGTGT-----  
 ACTTGAGCTGT 565  
 ||| | ||| | | || | ||| |||  
 |  
 Db 1366  
 ATCATTTTAGAATTTATTTTCGAAGGGGAATAGTTTCAATGTTTTATTCACTTGGGCTTT 1425  
  
 Qy 566 -----GAGGTCATCGGAATCCCGAC-----  
 ACCTG 590  
 || | || || |  
 |||||  
 Db 1426  
 TTTTCTTCCCCCTCTTTCTTTAAGAACTGCTCAATATTCAATCTGTTGTGAAGAACCTG 1485  
  
 Qy 591 ---TCCTCATCT-----GGAACAAG-----  
 TAAAAAGGGGTCAC----- 622  
 | | | || | |||| | || | | || |  
 Db 1486 ATTTGCAC-  
 TCTGTAGTGTTTAAAGAAACAAAGAACTCTAATATTGAATCTCTTAAATT 1544  
  
 Qy 623 -----TATGGA-----  
 GTT 631  
 |||| |  
 ||  
 Db 1545  
 TAGTGTATGTAAACAGCTTACAAATACGTATTGTCTAAATGCATTTAAATCTGTTTTATT 1604  
  
 Qy 632 CAAAGGA-----CAGAACTCCTGCCTGGTGACCGGGACAACCTG-----  
 GCC---- 673  
 |||| | || || || | |||| | | || |||  
 Db 1605  
 CAAAGAAAAGCTAAAGCAAAAACACTGGCATATGACCATGCAAGACTGTCAGTGCCAACA 1664  
  
 Qy 674 -----ATTCAG-----ACCCGGGGTGG-----CCCAGA--  
 AAAGCATG 704  
 | |||| || | || | |||| | || |  
 Db 1665  
 AAGACAACACTAATCAGCACATCGTACACTGGATTGCAGTGCTTCCCAGATTATTGAAAA 1724  
  
 Qy 705 AAGTAACTGGC-----TGGG-----  
 TGCTG 724  
 | || || | | || | |||  
 |  
 Db 1725  
 ATGTTACAGACAACCTTGCTGATTTTTTAAATGAGCGTAAAAGGCCCTCTAACCTATGCAG 1784  
  
 Qy 725 GTATCTCCTCTAAG--TAAGGAAGATGCTGGAG-----AATATG-----  
 AG 763  
 || || || || | || ||| |||| | |||||  
 |  
 Db 1785  
 GTTTCCCCATTATGCATATAGAAAATGCTAGTATGTTTTGCTCACTTCATATGTAACAGG 1844  
  
 Qy 764 TGCC-----ATGCATCCAATTC-----CCAAGG--ACAGGC--  
 TTCAGCATCA- 802

|||  
 ||  
 Db 1845  
 TGCCCTTATGTTGTGCTGTATCCTGTGCTTTTTCTGTGGGACCATTCCATTTCAGGAGCAA 1904  
  
 Qy 803 -----GCAAAAATTACA-----GTGGTTGATG--  
 CCTTACATGAAATACCAGTGAA 846  
 | | ||| || ||| || | ||| | ||| | |||  
 |  
 Db 1905 AGAGCACCATGATTCCAATCTTGTGTGTGTTTACTAACCCTTCCCTGAGGTT--  
 TGTGTA 1962  
  
 Qy 847 AAAAGG-----TGAAGGTGC---  
 CGAGCTATAAACCTCCAGAA 881  
 || ||| || | ||| | | | |||  
 ||  
 Db 1963  
 TGTGATATTGTGGTGTGTTTAGATCACTGAGTGTACAGAAGAGAGAAATTCAAACAAAA 2022  
  
 Qy 882 TATTATTAGTCTGCA-----TGG---TTAAAAGTAGTCATGGAT-  
 AACTACATTA 927  
 |||| | ||| || ||| || ||| || ||| ||  
 ||||  
 Db 2023  
 TATTGCTGTTCTTCAGTTTTGTTTGTGGAATTTGAAATTACTCAAATTTAAAATAAATTA 2082  
  
 Qy 928 C----CTGT---TCTTGCTAATAAGTTTCTTTTAATCCAAT-  
 CCACTAACAC----- 972  
 | |||| | || | ||||| ||| ||||| ||  
 Db 2083  
 CTGGACTGTGGAAATAACATAGAATTGAAGTTTTAATTAAATACCACTCAAACGAAAAGA 2142  
  
 Qy 973 -----  
 TTTAGTTATAT----- 983  
 | ||||| |||  
 Db 2143  
 ACAGTAGTTTTTGTAGTTTTATATTGGATACTGAGGCATTAGGGAGGCATGAAAGGAAGA 2202  
  
 Qy 984 -----TCACTG-----  
 GT 991  
 ||| ||  
 ||  
 Db 2203  
 GGAATGAGGATTGAGACATGTGAAGACATTGTGCATTATATCAATGTGCATTTCCTGTAGT 2262  
  
 Qy 992 T--TTACACAGAGAAATACAAAA---TAAAGA-----TCAC-----  
 AC 1024  
 | ||| || | || ||| | ||||| ||||  
 ||  
 Db 2263  
 TCATTAACAAGGTACATGCAATAGTCTAAAGAACCAGAGTCACTACTATAGTGGCTTAAC 2322  
  
 Qy 1025 ATCAAGACTATCTACAAAAATTTATTATA-----  
 TATTTACAGAAGAAAAGC- 1071  
 || | || ||| ||| | |||| | |||| ||||| |  
 |  
 Db 2323  
 ATTTAATCTGTCTCCAATATTTTAACCAAGTGACACCGGGGTTTTTATCGAAGCATTTC 2382  
  
 Qy 1072 -----ATG--CATATCAT-----TAAAC---

```

AAATAAAATACTTTTTATCACAA 1111
      |||  ||  |||||      |  |||  |||||  |||  ||
|
Db      2383
CTTAAATGAACAAATCATGGCTGTTATATTAAGTTGAAATAAAATATATTTAAACATGTA 2442

Qy      1112 AAAAAAAAAAAAAA 1124
      |||||  |||||
Db      2443 AAAAAAAAAAAAAA 2455

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RESULT 13

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US-10-478-914-20/c
; Sequence 20, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 20
; LENGTH: 2495
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-20

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Query Match          38.3%; Score 2653.5; DB 1; Length 2495;
Best Local Similarity 35.0%; Pred. No. 5e-156;
Matches 686; Conservative 0; Mismatches 426; Indels 847;
Gaps 103;

```

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Qy      2 CCGCTG---CCACCGCACCC---CGCCATGGAGCGG-----
CCGTCGCT----- 39
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Db      1977
CCACAATATCCAACATACACAAACCTCAGGGAAGGGTTAGTAAACACACACAAGATTGGA 1918

Qy      40 -----GCGCGCCCTGCTCCT-----CGGCGCCGCTG-----
GGCTGCTGCT 75
      |  || |  |||||  ||  || | |  || | |
||
Db      1917
ATCATGGTGCTCTTTGCTCCTGAATGGAATGGTCCACAGAAAAGCACAGGATACAGCA 1858

Qy      76 CCT-----GCTCCTGCCCCT-----CTCCTCTTCCT--
CCTCTTC----- 108
      |      || |||  |      |  | | |  | | |||
Db      1857
CAACATAAGGGCACCTGTTACATATGAAGTGAGCAAAACATACTAGCATTTTCTATATGC 1798

Qy      109 -----GGACACCTGC-----GGCCCCT---GC-----

```

GAGCCGGCCTC 138  
 ||| ||||| |||| | || | |||  
 Db 1797  
 ATAATGGGGAAACCTGCATAGGTTAGAGGGCCTTTTACGCTCATTAAAAATCAGGCAAG 1738

Qy 139 CTGCCC-----C-----CCCTGC---CC-----  
 CCGCTGGGCTGC 166  
 || | | | |||| || |||  
 ||||  
 Db 1737  
 TTGTCTGTAAACATTTTTCAATAATCTGGGAAGCACTGCAATCCAGTGTACGATGTGCTGA 1678

Qy 167 CTGCTG-----GGCG-----AGACCCGC---GACGCGTGC-----  
 GGCT- 197  
 | || ||| || | || | ||  
 |||  
 Db 1677  
 TTAGTGTTGTCTTTGTTGGCACTGACAGTCTTGCATGGTCATATGCCAGTGTTTTTGCTT 1618

Qy 198 --GCTGCCCTATG--TGCGCCCGCGGCGAGGGC---GAGCCGTGCGGGGGTG---  
 GCGG 246  
 ||| || || | | | || | || || ||  
 |  
 Db 1617  
 TAGCTTTTCTTTGAATAAAACAGATTTAAATGCATTTAGACAATACGTATTTGTAAGCTG 1558

Qy 247 -----CGC-----  
 CGG 252  
 | | |

Db 1557  
 TTTACATACTACTAAATTTAAGAGATTCAATATTAGAGTTTCTTTGTTTCTTTAAACACTA 1498

Qy 253 CAGGG-----GGTACTGCGCGCCGG---GCATGGAGTGC-  
 GTGAAGAGCCGCAAGA 299  
 ||| | ||| || | | | || | || || |  
 ||||  
 Db 1497  
 CAGAGTGCAAATCAGGTTCTTCACAACAGATTGAATATTGAGCAGTTCTTTAAAGAAAGA 1438

Qy 300 GCGGGAAG-GGTAAAGCC-----  
 GGGGCAGCAGCC----- 328  
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Db 1437  
 GGGGGAAGAAAAAAGCCCAAGTGAATAAAACATTGAACTATTCCCCTTCGAAAATAAA 1378

Qy 329 -----GGCGGTCCGGGT-----  
 GTA 343  
 || | ||| ||

||  
 Db 1377  
 TTCTAAAATGATGTGGAATGTGAAATAAGGTTTTAACATAGGTGATCCAAGTTTATAGTT 1318

Qy 344 AGCGGCGTG-----TGCGTG-----TGCAAGAGC-  
 CGCTACC----- 374  
 || | | || | |||| | || | ||

Db 1317  
 AGAAACAAAAAGAAGTCCTTCATGAAATAAAGGTTACAAGAACACGTTGCCTGTTTTCCC 1258

Qy 375 -----CGGTGT-----  
 GCGGCAG 387

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|||||
Db      1257
CCATTATAAACTGAGAAGTGGGTAAAGACGATGTTTCAGTACGAAAATAGGTGACTACAG 1198

Qy      388 CGACGGCAC--CACCTACCCGAGCGG-----CTGCCA-GCTGCGCGCCG-
CCAGCCAGA 437

          | || | || || | | || |         |||| |||| | || | ||| |
|
Db      1197 GATCAGCGCTTCATCT-CACATGCTGTACCCAAAGCCAGGCTGTG-
GCTGTCCATACGGT 1140

Qy      438 GG-----GCCGA---GAGCCGCGGGGAGAAGGCCATCAC-----
CCAG-- 472

          ||              || |   | ||| ||| | | | ||| |||    || |
Db      1139
GGTGCGGTATAACCATAAACCAAAAGGTGCCTGGGGAGGGACGGCAACACTGGGTCTTGCT 1080

Qy      473 GTCAGCA-----AGGGC--ACC-----TGCG-----AGCAAGGTC--
CT 502

          ||||| |||| |||           || |       ||| | ||

||
Db      1079
GTCAGCATCAACTGGGGCTGACCATAACAATGGGTGTGTCTCTGTAGCTTGTTCTTCT 1020

Qy      503 TC----CATAGTGACGC-----
CCCCAAGGACATCTGGAATGTC ACT 541

          ||   | |||| |               || ||   |   || | | ||

|
Db      1019 TCTTTTCTCAGTGATTCTGAAGCATCTAATTTATCCACCTTTG---TCAAGTAC-
TCCTT 964

Qy      542 GGTGCCCAGG-TGTACTTGAGC-----TG TGAGGTCAT-
CGGAATC 580

          || || || || | | ||           ||||     ||| | |

||
Db      963
CATGACCTGGATGAAATAGGGCATGGCAAAATCCATGATATTGTGCCTCCATGCAGTTTC 904

Qy      581 ----CCGACACCTGTCC-----TCAT--CTGG-----
AACAAGGTAAAAAGGGGTC 620

          ||||| ||| ||             || |   | ||           |||| | ||||

||
Db      903
TAGGACGACATCTGGCCTTAAAAGATCGTAACAGGTAAACAGACAAGCTCCAAGCACTC 844

Qy      621 ACTAT-----
GGAGTTCAAAGGACAGAAC----- 644

          || |                   ||||| | || |

Db      843
TCTTTTTTCTTCCTGCAAAAACCACTGCAGGAGTTCTTCAGCCAATTCAGTATCTTTAGA 784

Qy      645 -----TCCTGCCTGGTGACC-----GG--GACAACCTGGC-----
CATT 676

          | |||| | |   ||           || | |   || ||           ||

|
Db      783
TTCAGAAGCATACTGCATTGCATCCTTGTAAGGCTGTCTTTCTTGCACAGCTCTACACT 724

Qy      677 CAG--ACCCGGG---GTGGCCC-----AGAAAAGCATGAAGT-----

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AACTGGCTGGG 719  
| | | | | | | | | | | | | | | | | | | |  
|  
Db 723  
CTGTTTCCAGCGATTGTTGCCTTTGAAGAGATAAGCAGCAATTCTCCTGAACTCAATGAG 664

Qy 720 TGCTGGTATCTCCT----CTAAGTAAGGAAGATGCTGGAGAATATGAGTGCCAT--  
GCAT 773  
| | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 663 TTCATGTTTTTCCAAACGCTGAGCAAGCGAGATATTGTCAAAGTTGT----  
CATAAGCAT 608

Qy 774 CCA-----ATTCCCAAGGACAGG-----  
CTTCAG----- 797  
| | | | | | | | | | | | | | | | | | | |  
Db 607  
CTATTGATGTTGCGAGAGCCTGATAATCTTCTTCTGTAATAAAAAGATTGTTCAATGATT 548

Qy 798 CAT---CAG-----CAAAAAT-----  
TACAGTGGTT 820  
| | | | | | | | | | | | | | | | | | | |  
| | | | | | | |  
Db 547  
CATTACAGATTTGTTGTTATGGTTCTGAACTGAACGCAAATACGGTTTCACCAGTGGTA 488

Qy 821 GATG-----CCTTACATGAAATACCAG--  
TGAAAAAAGGTGAAGGTGCCGAGCTATAA-- 871  
| | | | | | | | | | | | | | | | | | | |  
Db 487 GCTGTTTAACTTGC-  
TGAAATAATTGACTGCACGAGTGTGATCCAACCGTGGAGACAGC 429

Qy 872 ACCTCCAGAATATTATTAGTCTGCATGG-----  
TTAAAAGTAGTCATGGATAACT--- 921  
| | | | | | | | | | | | | | | | | | | |  
Db 428  
ACCATCAGCAAATCATTTAACAACAGAGGCTTGAATTCTAAGTAGAACTGTATTGCTCTG 369

Qy 922 -----ACATT----ACCTG-----  
TTCTTGCCT- 940  
| | | | | | | | | | | | | | | | | | | |  
Db 368  
TAGTATAGTTCCACATTGGCAACCTTGGTAATGATATCTTTGAATTGCCCTTCTTTCCAG 309

Qy 941 -AATAAGTT-----  
TCTTTTAATCCAATC----- 963  
| | | | | | | | | | | | | | | | | | | |  
Db 308  
GCATCAGTTGGATGATTCATCATGGTAATTATGGCATTATCATATTCTTCATACTTGTC 249

Qy 964 CACTAACACTTTAGTTATATTCA-----CTGGTTTTACA-----  
CAGAGAA 1004  
| | | | | | | | | | | | | | | | | | | |  
|  
Db 248  
TACAAAAACACCAGTTCTGCCCAAAGATGAGCTTGTCTGCAGCTCTTAGCACCTTGGGA 189

Qy 1005 ATACAAAATAAAGATC---ACACATCAAG-----ACTATCT---  
ACAAAAATTTA 1048  
| | | | | | | | | | | | | | | | | | | |



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|||||||
Db          188
ATATTCACCTCTAGACCAGAACAGCTCCAGGTGCTCCCTCATTCTGAGGCTTAAATTTA 129

Qy          1049 TTATATA-----TTTACAGAAGAAA-----AGCATG--
CATATCATTAAACA 1088
          ||||           | ||| | | |           ||| | || ||
|
Db          128
GAGTATAGAATAGCTAATTTCAGTAAACATTCCCATGTGAGCTCGCTCAAGTCCCAGTGCT 69

Qy          1089 AAT---AAAATACTTTTTTATCACAAAAAAAAAAAAAAAAAA 1124
          |   || || | | | | | | |||| | | |
Db          68  GCTTCCAACATGGTGATCAGCTCTTCAAATAGCCACGA 30

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RESULT 14
US-10-478-914-3/c
; Sequence 3, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 3
; LENGTH: 2083
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-3

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Query Match          38.3%; Score 2653; DB 1; Length 2083;
Best Local Similarity 36.4%; Pred. No. 2.4e-156;
Matches 680; Conservative 0; Mismatches 407; Indels 780;
Gaps 99;

```

```

Qy          1  GCCGCTGCCACC-GCACCCCG---
CCATGGAGCGGCCGT----- 35
          || || || ||| ||| | ||   |||   | |||| |
Db          2080 GCGGCCGCGACCTGCAGCTCGAGCACAT---
GTGGCCTTTTTTTTTTTTTTTTTTTTATTTTG 2024

Qy          36  CGCTGCGCGCCCTG-----CTCCTCGGCGCCGCTGGG-----
CTGCTGCTCCTGC- 80
          | || | || |||           ||||           | |           || || | |||
|
Db          2023 C-CTTCTTGCTCTGGTGGTTAGTCTCCTACTATAAACATGATTTTCCTTCTTC-
CCTTCA 1966

Qy          81  ---TCCTGCCCTCTCCTC----TTCCTCCT-----
CTTCGGACACC 115

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||| | ||| | ||| ||| |
Db          1965
GAGTCCTGTCAATCTTTACTTTTTTCTCATTAAATATACAGAAGTTATACTACAGATACA 1906

Qy          116 TGC-GGCC---CTGC-----GAGCCG-----
GCCTCCT--- 140
      | | || | ||| | ||| | | || |
Db          1905
TTCAAGCTCATGACTGCTAAAACTTCTGAAATGAGCCTTAATTCATACGAATCATTTT 1846

Qy          141 -----GCCCGCCCCCT-----
GCCCCCCTGGGCTGCCTGC 170
      | | | | | | ||| ||| |||
|
Db          1845 TATTTGTTCTTTTTTTTTTGAGACAGACTCTTACTCTGTGCGCCAGGCTGGAGTGC--
AC 1788

Qy          171 TGGGCGAGACCCGCGACGCGTGC GGCTGCTGCCCTATGTGCGCCCGCG-
GCGAGGGCGAG 229
      | ||| || | || | | ||| || | || | | ||| |
||
Db          1787 T-GGCATGATCT-CGGCTC-----ACTGCAACC---TCTGC-
CTCACGAGTTAGGTCAAG 1739

Qy          230 CCGTGC GGGGGTGGCGGC--GCCG----GCAGGG-----GGT-
ACTGCGCGCCGGGCAT 276
      | | | | || | || | || | ||| | || |
|
Db          1738 CAATTCTTCTGCCTCAGCCTCCCGAGGAGCTAGGATTACAGGTCCCTGC-
CACCATGCCT 1680

Qy          277 GGAGTGCGTGAAGAGCCGCAAGAGGCGGAAGGGTAAAGCCGGGGCAGC--
AGCCGG----- 330
      |||| | | || | | ||| || | || | |||
Db          1679 -
GAGTAATTTTTGTATTTTTTAGTAGAGATGGGGTTTCACCATGTTAGCCAAGCTGGTCTC 1621

Qy          331 -----CGGTC--CGGGTG-----TAAGC-----
GGC 349
      | | | | |||| | |||
|||
Db          1620
GAATTCCTGACCTCAGGTGATCCGCCCACCTCAGCCTCCCAAAGTGCTGGGATTACGGGC 1561

Qy          350 GTGTGCGT--GTGCAAGAGCCGCTA-----
CCCGGTGTGC-- 382
      ||| || |||| | ||| ||| ||| |
Db          1560 GTGAGCCACGGTGCCTG-
GCCTCTATTTTTATTTTAAATACCTTTTGCCCTGAAATCTA 1502

Qy          383 -GGCAGC-----GACGGCACCACTACC-----
CGAGCG 410
      | | | | ||| | |||
|
Db          1501
TGTCCTCTGATTATCAACACTGCTTACCAGTTTTATTTTTGTTGGTATTTATTTTCATTC- 1443

Qy          411 GCTGCCAGCTGCGCGCC--GCCAGCCAGA-----GGGCCGAGAGC-----
CGCGG-- 453

```

Db 1442  
 AATCCCAGCTCTACAACCTTACCAGTATAAAAATTTGGATCAGTTACTTAATCTTGCAGTT 1383

Qy 454 -----GGAGAAGG-----CCATCA-----  
 CCCAGGTCAGCAAGGG 483

Db 1382  
 TCTTCCTTTTAAAAATGGAATAATATTATCTATCATATAAAATGCCAGTTAA----- 1330

Qy 484 CACCTGCGAGCAAGGTCCTTCCATAGTGAC--GCCCCC--  
 CAAGGACATCTGGAATGTCA 539

Db 1329 CAAATATGAACCTAACACCTACAAT-GTGCCAGGCACCATTCTAGGGAA--  
 TAGAATGTAA 1273

Qy 540 CTGGTGCCAGGTGTACTTGAGCTG--TGAGGT--CATC-----  
 GGAATCCCGAC---- 585

Db 1272 ATAAGTTCAA---  
 GTTCTTGACCTGAATAAGTTTACATTTTAGTGAGAAGACAGACAATA 1216

Qy 586 -----ACCTGTCC-----  
 TCATCTGGAACAAGGTAAAAAGGGG--- 618

Db 1215  
 AATCAATAACATGTCCATTATGCCAGATAGTTTTAAATGTCACAAAGAAAAAGGGGGAGC 1156

Qy 619 -----  
 TCACTATGG 627

Db 1155  
 AATCAGATAGTGATGGAAGTTACACTCTAGAGAGGGTGGACAGAAAAAGTTTCTCTTAGG 1096

Qy 628 AGTT-----CAAAG-----GACAG-----AACTCC-----  
 TGCCTG 653

Db 1095  
 AGATGACATCTGAACAGAGATCTAAATGACTGAGTACAAACCCCAATGGAAAAGTGATTG 1036

Qy 654 GTG-----AC--  
 CGGGACAACC----- 668

Db 1035  
 GTGTGTTGTGAAACAGCAACACAGCCAGTTTGTACTAGATGAGTAGATCAGAATGACTGAG 976

Qy 669 -----TGGCCAT-----TCAGA-----CCCGGGGTGGCC-----  
 CAG--- 695

Db 975  
 GTGGGACTGTGGTCATCAAAGAGATCAGAGAGGTAGCCTGGGAAGGCCACATCACAGAAT 916

Qy 696 -----AAAAGC---ATGAAGTAACTG-  
 GCTGGGTGCTGGTATCTC--- 731

Db 915  
 GTCCTTTGGGCCTCTGTAAAGAGCGTTTTGAAAAACAGTTCTGAGCAAAGGTTAGTCATT 856

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Qy          732 -----CTCTAAGTAAGG-----
AAGATGCTGGAGAA 757

|||||      ||||      |||

|||||||
Db          855
TAACTTGACTTACTCTTTAGAAGGATCACTTTGGCTATTGAGTGGCAAACAAC TGGAGAA 796

Qy          758 -----TATGAGTGC-----
CATGCATCCAATTCCCAAGGACAGGCTTCAGCATCAGC 804

|| | | | |      || | | | |      ||      ||| | | | | | | |
|
Db          795
GTGGTTAGGGGAGCACTGTGGGCAGGAATAGAAGGAGGAAAAGCAGACTGGAGCCTAATC 736

Qy          805 AAAAATTACAG-----TGGTTGA--TGCCT--TACATGA-----
AATACC----- 840

| | | | | |      ||      ||      |||||      ||||| |      || | |
Db          735
CAGTACTTCAGATGAGAAATGACAGATTTGCCTGGTACATCATTTTCTATCCCTTTACTT 676

Qy          841 -----AGTGAAAA-----
AAGGTGA 855

||||| |||      ||

|||
Db          675
ATAACTTATTGGTGTATTTTTATTTTAAGTGTAATTTTTATAAATGAAGCATAATTTGA 616

Qy          856 AGGT-----GCCGAG-----CTATAAAC-----
CTCCA----- 878

|| |      | | |      |||| | |      |||||
Db          615
AGATTGATATGTTTCGACTTGTGTTTTCTATTATCATGGTGTCTCTCCACATACCTTTTC 556

Qy          879 -----GAATATTATTAG--
TCTGCATGGTTAAAAAGTAGTCATGGATAACTACAT 925

| | | |||||      || | | | | |      | | | |      |||||
|
Db          555
CCTTTAGTTCTGCTTCTTATTGTGCTCCTCAAGTCTATTTTTGTTCCTTTCCCTCTACTT 496

Qy          926 TACCTGTCTCTGCCT-AATAAG---TTTCTTTTAATCCA-----
ATCCACTAACACTTT 975

||||| |      ||      ||| |      ||||| ||      |||      | | | | | |
|||
Db          495
CTACTGTTTTGAACTGTATATGCTATTTTCTATTTTGCCAGGAGTTACCCCCTTCAATTTT 436

Qy          976 AGTTATATTCACT-GGTTT--TACACAGAGAAATACAAAATAAAGATC-
ACACATCAAGA 1031

||| || | | | | | | |      ||||| |      || |      | | | | | | |||
Db          435
CGTTGTACTCTCTCAGTCTCAAACACATACCCATGCTCTCTTCTGTCTTCTCTTCATAT 376

Qy          1032 CTATCTACAAAAATTTATTATA-----TATTTACAG-
AAGA 1066

| |||| | | |||| | | ||      ||||| ||

||
Db          375 C-
ATCTTCTAGAATTAGTTCTACCCCGATTTTCTACCAATTTATTTTATTTTCCAATCAGT 317

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Qy      1067 A-----AAGCATGCATATCA-----
TTAAACAAATAAAATACTTTTTATCACAAAAAAA 1116
      |      |  ||      ||||      ||  || |||      ||  |||| |      |
Db      316
ACATTGATTGAGATTTATCAATATGTTTTACCAATTTTATCATTTTTTTTGGAGGCTTGT 257

Qy      1117 AAAAAAA 1123
      |  ||
Db      256 TATTTAA 250

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RESULT 15

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US-10-478-914-60/c
; Sequence 60, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 60
; LENGTH: 2022
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-60

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Query Match      38.0%; Score 2628.5; DB 1; Length 2022;
Best Local Similarity 37.4%; Pred. No. 8.3e-155;
Matches 654; Conservative 0; Mismatches 427; Indels 667;
Gaps 95;

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```

Qy      1 GCCGCT---GC-CA-----CC-----
GCAC-----C 17
      || |||      || ||      ||
|
Db      2020
GCAGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTTAGATGGAGTTTGTCTCTTTTGC 1961

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Qy      18 CC-----GCCATGGAGCGGCCGTCGCTGCGCGCCCTGCTCC-TCGGCGCCG-
CTG 65
      ||      || |||| ||| | |||      || | |||| | || ||||
|||
Db      1960 CCAGGCTGGAGTGCAATGGCGCGATC-TCG----GCTCACTGCAACTTC--
CGCCTCCTG 1908

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Qy      66 GGCTGCTGCTCCTGCTCCTGCCCCTCTCCTCTTCCTCCT-----CT-----
TC 108
      || |      ||| | |||||      |||| |||||      ||
|
Db      1907 GGTTCAAGCTATT-CTCCTG-----

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CCTCAGCCTCCTGAGTAGCTGAGGTGAGAGGAC 1856

Qy 109 GGACACCTGCGGCCCTGC--GAGCC-----GGCCTC-----CTG----  
CCCG 145

||| | | || ||| |||| | | | ||| |

||

Db 1855 TGACGCGAGAGG--

ATTGCTTGAGCCTAGGAGGTTGAGGTTGCAGTGAGCTGTGTTACG 1798

Qy 146 CCCCTG--CCCC-GCTGGGCTGCCTGCTGGGCGAGACCC-  
GCGACGCGTGCGGCTGCTG 201

|| ||| | || ||||| || | || ||||| | | | |

Db 1797 CCACTGGACTCCAGGCTGGG-TG---

ACAAAGCAAGACCCTGTCTCAAAAACAAAACAA 1742

Qy 202 CCCTATGTGC-----  
GCCCCGCGCGAGGGC-----G 227

| | | ||| | | |

Db 1741

ACAAACAAACAAACAAAAAATAACCAACAAAAAACCCCTGAGTTTAAGTTTGATTTTA 1682

Qy 228 AGCCGTGCGGGGGTGGCGG-----CGCCGGCAGGGGGTACTGCG-  
CGCCGGGCATGGA 279

|| | || ||| || | | | |||| ||| | |

||||

Db 1681 AGACCTGTAGGGACAGCAGATTAGTTCTACTTTAATGGGTA-TGCATCATC-----  
TGGA 1628

Qy 280 GTGCGTGAAGAGCCGCAAGAGGCGGAAGGGTAAAGCCGGG-----  
GCAGCAGCCGGCG 332

|| ||| | | || | | || | | || ||| |

|

Db 1627 AAGC---

AAGGGTCATAAAAAGAAGATACATCTTCACTGGCACCATCACATCAGTCATCA 1571

Qy 333 GTCCGGGTGTAAGCGGCGTGTGCGTGTGCAAGAGCC-----  
GCTACC----- 374

|||| | || | | | | || ||| ||

Db 1570 GTCC-----TTAGATAC-

AGAACCTTTACTGACTCCCTCAAACTTCCATGCTTCCAAAC 1517

Qy 375 -----CGGTGTGCGGCAGCGACGGCACCA-----  
CCTACCCGAGC----- 409

| ||| | | ||| || ||| | |

Db 1516

TAACCAAGCAGTTCTTCTACATTGGGATCATCGAATTTCCCTTCATGTTCCAACCTCTCCT 1457

Qy 410 --GGCTGCCAGCTGCGC----GCCGCC--AGCCA---GAGGGCC-----  
GAGAG----- 447

||| | | | | | || |||| || || |||

Db 1456

CTAGCTTCAATATACATAGACAACCTTAGCCATCTGAAAACCTACTTTTAGAATATTC 1397

Qy 448 CCGCGGGG-----AGAAGGCCATCACCCAGGT-----  
CAGCAAGG 482

||| | || | | | || ||| | | ||

Db 1396

CCGAGTGTTCCACGTAAGTCCTCTGCCAGATTACATACCCATAAATTCTACTTCATAA 1337

Qy 483 GCACCTGC-----

GAG 493

|| | | |

Db 1336

CCCCATACTGTTCTTAAAAAGAAATAGAAAAATATATCAATATAACTTTAAATAAGA 1277

Qy 494 CAAGGTCCTTC-----

CATAGTGACGCC----- 517

|| | ||||

|| | || | ||

Db 1276

CACAAACCTTCATGAAAATATAGTCATCAAATTTATTTTCATTGGGATGCCATTTTTTGA 1217

Qy 518 -----CCCAAG-----GACAT-----

CTGGAATGTC----- 538

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| ||| |

Db 1216

AGAATTCCTAAGACTAATGTTTCTTGACATGCAAGAGTTAGCATTAAATAGCTTACGTTAC 1157

Qy 539 -----ACTGGTGCCAGGTGTACTTGAGCTGT----GAG-----

GTCATCGGAATCC 581

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Db 1156

TATAAATACTGCTGCTTGAAGCAGTACAACTGTTTTAGAGTTTTAAGACTACAGACTTT 1097

Qy 582 CG--ACACCTGTCCTCATCTG-----GAACA--

AGGTAAAA 613

| || | || | || |

|||| ||| |

Db 1096

CATTACTCAAATCTTATTTCAGTAAATGTAAAAATCAGAAGGTTCTGAACAGCTGGTTAGG 1037

Qy 614 AGGG--GTCACATGGAG-----TTCAAAGGACAG--

AACTCCTG 649

| || | || ||| ||

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Db 1036

AAGGTAGCCAAGATGCAGGAAAGATGTCTGCGCCTCCTTTTCAAGGGCAGCCAACCTCTTG 977

Qy 650 CC----TGGTGACCGGA---CAACCTGGCCATTTCAGAC-----

CCGGGGTGGCCCA--- 694

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| ||

Db 976 AACAGTAGGTG-

CCAAAATATCCACATGGCCTTTATAGCTTCCACCTGCGTCACACACAA 918

Qy 695 -----GAAAAGCATGAAGTAAC-TGGCTG-----

GGTGC--T 723

|| | || |||| |||| || | |

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|

Db 917

ATAACAAAGTAATGTAAATGACATGCTTGAAATAACTTGTCAGCAATACTTTGGCTCAAT 858

Qy 724

GGTATCTCCTCTAAGTAAGGAAGATGCTGGAGAATATGAGTGCCATGCATCCAATTCCCA 783

|||| | |

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|

Db 857

TATATCACTTTAACTTTGCTTGACGCAATAAAATGT-ACTACTGGGCAAATTA-

TCTCC 800

Qy 784 AGGAC--AGGCTTCAGCATCAG-----CAAAAATTACAGTG-----

GTTGATGCC 826

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Db 799  
AGA A C T T T G A C T T T A A A A A T G T T A A A T C A A T T A T T T C A A T A T A A A T A A A T A A T T A G G C C 740

Qy 827 TTAC---ATGAAATACCA-----  
GTG A A A A A A G G T G A A G -- 857  
| | | | | | | | | | | | | | | |

Db 739  
T C A C T A A C A G C T G T C C C A A C A C C T C T A C C C A C C C T T G G C T C G G A A C A A C T A G T T A G G C C 680

Qy 858 -----GTGCCGAGCTATAAA-----CCTCC-----  
A G A A T A T T A 886  
| | | | | | | | | | | | | | | |

Db 679  
T G A G T C T T A C A A T T T T T C A G G A A C A A G C T A A C A A A G G G C A T C C C A G G C A G A G G A A T A A 620

Qy 887 TTAGTCTGCATGGTTAAAAG----TAGTCATGGATAACTACATTACCTGTTC----  
T T G C 938  
| | | | | | | | | | | | | | | |

Db 619 TA TG-CTGAATTACCACCTGAGTTAAGTCAAAGGCTTCTG-  
A T T C C T T G T T C A A A A T C A C 562

Qy 939 CTAATA-----AGTTTCTT--TTAATCCA-----  
A T C C A C T A A C A C T T T A G T T A T A T 983  
| | | | | | | | | | | | | | | |

Db 561 CTATTATGCTCTTGTTTCCTAATAATTCCACAAAATGTTCAACT-  
A C T C T T A T G A C A T T A 503

Qy 984 TC ACT-----GGTTTTACACAG-AGAAATACA---  
A A A T A A A G A T C A C A C A ----- 1025  
| | | | | | | | | | | | | | | |

Db 502  
A C A C T T C A A G A G A A A G A G C T A A G C T G A A G T C T T T C A T T C A C A T A A A G A T G A C A C A A T T T A 443

Qy 1026 -----TCAAGAC---  
T A T C T A C A A A A T T T A T T A T A T A T T T A C A G A A G A A A G ----- 1070  
| | | | | | | | | | | | | | | |

Db 442  
A A A A T G C T A C A A G G C A G G T A T G G A C A A A G T A C T A T G A G G G T A A T A A G G A G G A A T G A T T A 383

Qy 1071 -CATGC-----ATATCATTAACAAAT-----  
A A A A T A C T T T T T A T C A C A A A A A A 1116  
| | | | | | | | | | | | | | | |

Db 382 A C A C G C T A A A A A T A T A C T C T T A A C C T A A T G A A A T G A A A G T A C T G C C T -  
T C C C A A A C C G A A 324

Qy 1117 A A A A A A A A 1124  
| | | |

Db 323 G T T C A A A A 316

Search completed: March 9, 2010, 15:51:45  
Job time : 7.15787 secs



OM nucleic - nucleic search, using sw model

Run on: March 9, 2010, 15:51:16 ; Search time 1 Seconds  
(without alignments)  
1134.946 Million cell

updates/sec

Title: US-10-572-905-7  
Perfect score: 17216  
Sequence: 1 ttgaaatcaggaaatcaggc.....agggaaaaaattgcttgact  
2901

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 417 seqs, 79705 residues

Total number of hits satisfying chosen parameters: 834

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : 7335755.seq:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being  
printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
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1	6539.5	38.0	3210	1	US-10-478-914-4	Sequence 4,
Appli						
c 2	6447	37.4	3210	1	US-10-478-914-4	Sequence 4,
Appli						
3	6279.5	36.5	3589	1	US-10-478-914-21	Sequence 21,
Appl						
c 4	6178.5	35.9	3589	1	US-10-478-914-21	Sequence 21,
Appl						
5	5635	32.7	2437	1	US-10-478-914-61	Sequence 61,
Appl						
c 6	5600.5	32.5	2437	1	US-10-478-914-61	Sequence 61,
Appl						
7	5410	31.4	2495	1	US-10-478-914-20	Sequence 20,
Appl						
c 8	5366.5	31.2	2336	1	US-10-478-914-57	Sequence 57,
Appl						
c 9	5351	31.1	2495	1	US-10-478-914-20	Sequence 20,
Appl						
10	5267	30.6	2120	1	US-10-478-914-64	Sequence 64,
Appl						

c	11	5196.5	30.2	2120	1	US-10-478-914-64	Sequence 64,
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c	12	5120	29.7	2198	1	US-10-478-914-17	Sequence 17,
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	13	5066.5	29.4	2198	1	US-10-478-914-17	Sequence 17,
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	14	5053	29.4	2336	1	US-10-478-914-57	Sequence 57,
Appl							
c	15	4867	28.3	2022	1	US-10-478-914-60	Sequence 60,
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c	16	4707	27.3	2083	1	US-10-478-914-3	Sequence 3,
Appli							
	17	4686	27.2	1946	1	US-10-478-914-62	Sequence 62,
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	18	4587	26.6	2083	1	US-10-478-914-3	Sequence 3,
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	19	4447	25.8	2022	1	US-10-478-914-60	Sequence 60,
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c	20	4409.5	25.6	1946	1	US-10-478-914-62	Sequence 62,
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	22	3993	23.2	1813	1	US-10-478-914-63	Sequence 63,
Appl							
	23	2295	13.3	1020	1	US-10-478-914-68	Sequence 68,
Appl							
	24	2293	13.3	889	1	US-10-478-914-5	Sequence 5,
Appli							
	25	2255	13.1	938	1	US-10-478-914-69	Sequence 69,
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c	26	2252	13.1	1020	1	US-10-478-914-68	Sequence 68,
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c	27	2245.5	13.0	938	1	US-10-478-914-69	Sequence 69,
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	28	2240	13.0	867	1	US-10-478-914-6	Sequence 6,
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c	29	2194	12.7	909	1	US-10-478-914-67	Sequence 67,
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c	30	2193	12.7	889	1	US-10-478-914-5	Sequence 5,
Appli							
c	31	2188	12.7	867	1	US-10-478-914-6	Sequence 6,
Appli							
c	32	2182	12.7	889	1	US-10-478-914-9	Sequence 9,
Appli							
	33	2176	12.6	839	1	US-10-478-914-16	Sequence 16,
Appl							
c	34	2151	12.5	816	1	US-10-478-914-15	Sequence 15,
Appl							
	35	2145.5	12.5	816	1	US-10-478-914-15	Sequence 15,
Appl							
c	36	2123	12.3	839	1	US-10-478-914-16	Sequence 16,
Appl							
	37	2097.5	12.2	794	1	US-10-478-914-13	Sequence 13,
Appl							
	38	2096.5	12.2	889	1	US-10-478-914-9	Sequence 9,
Appli							
	39	2087	12.1	816	1	US-10-478-914-38	Sequence 38,
Appl							
	40	2076	12.1	909	1	US-10-478-914-66	Sequence 66,
Appl							

c	41	2068.5	12.0	811	1	US-10-478-914-37	Sequence 37,
Appl							
c	42	2051.5	11.9	794	1	US-10-478-914-13	Sequence 13,
Appl							
c	43	2045.5	11.9	845	1	US-10-478-914-18	Sequence 18,
Appl							
c	44	2043	11.9	816	1	US-10-478-914-38	Sequence 38,
Appl							
	45	2039	11.8	845	1	US-10-478-914-18	Sequence 18,
Appl							

# ALIGNMENTS

## RESULT 1

US-10-478-914-4

```
; Sequence 4, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 4
; LENGTH: 3210
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-4
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Query Match          38.0%; Score 6539.5; DB 1; Length 3210;
Best Local Similarity 44.5%; Pred. No. 0;
Matches 1573; Conservative 0; Mismatches 997; Indels 963;
Gaps 215;
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Qy          1 TTGAAAT-CAGGAAATCAGGCCGGG----CGCAGTGGCTC-----
ATGCCT----- 41
          |||  | | ||  |||||  |  ||||  |||  | |||
Db          7 TTGGCCTACTGGCC--
CAGGCCTTGACACGCAGGTGCTCTCTTAGTGCTCCCTGGCAAG 64
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Qy          42 -----GTAAGCC----CAGCACT-----TTGG--GAGGCGGAGGCG--
GGTGGATC---C 80
          | | | |  |||  ||  | | | | ||| ||| | | ||| |
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Db          65
GATGGGAAGGCATGTTTCAGTCCTAGGAGTAGGAAGGGGCAGAGGTGTTGATGGCCCCTAC 124
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Qy          81 ATTGAGGTC-----AGGAGC-----TCAAGA---
CCAGCCTGGTCAACATGGTGAAA 124
          | | || |  |||||  || | |  ||  ||| ||  ||  ||
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Db      125
AGAGCGGCCAAGGACAAGGAGCTGCTGTTCGAAACAGCCTTCCTGCTCCCCAACCTGCCT 184

Qy      125
CCCCGTCTCTACTAAAAATACAAAAAAAAAATTAGCTGGGCGTGTGGCGGGA----- 177
          ||| | | | | | | | | | | | | | | | | | | | | |
Db      185 CCC--ACCCAACAGGTTTTGC----ATATACTCTACTGGG-----
AAGAGGGACACACC 233

Qy      178 GCCTGTAGTCCCAGCTACACGGGAGGCTAAGGTGGGAGAATTG-
CTTGAACCCGGGAG-- 234
          | | | | | | | | | | | | | | | | | | | | | |
Db      234 GACTGCA-TCACTGCCCTCCAAGTCTCTCC-----
CTGCCCTGTCCAGCATCCAGGAGCA 287

Qy      235 -----
GCGGAGGTTGCAGTGAGCTGAGATTGCACCATTGCACTCCAGCCTGGGCGACAG 288
          | | | | | | | | | | | | | | | | | | | | | |
|
Db      288 CCCCTAGTTGGGGAAGC----TTCTGTGACTCCCCCT---ACAACAGCCTAG--
GATGG 337

Qy      289
AGCAAGACTCTCTCAAAAAAAAAAAAAAAAAAGAAAGAAAGAAATCAGAAAATCGACCACAGT 348
          || | | | | | | | | | | | | | | | | | | | | |
|
Db      338 AGTGGGGTT-----
TGTTGAACAAATGCAGAAGGCAGTCTTAGGGAGGTCAGCTGA 387

Qy      349 GGTAGCCACCTGGCCTAATGCTGTGTTTTTG-----
TACC----- 383
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Db      388 CAT-GCC-
CCTGGCCTGTGGCTGGGAAGTAGCAGAGGCTAAGGTTCTTCCCCGCTCTGGG 445

Qy      384 --TGACAGGGGT--CAC----TCATTTTAGGCACAAC TC-
CTTCATTCTTTGTGAAATT- 433
          || | | | | | | | | | | | | | | | | | | | | |
|
Db      446
GTTGCCAGGAGTAGCACTGGATCAGTCAGGTGACAGGGCTCTCCTCTCTCTGAGCAGGTC 505

Qy      434 -AGTGAGTTTCTTCTA---CCCGTCACCAGATTCAATATGT-
TCTATTAATACACCGAT 488
          ||| | | | | | | | | | | | | | | | | | | |
Db      506 CGGTG-
GCAGCCTTCAAGGTCGCCACGCCGTATTCCCTGTATGTCTGT----- 552

Qy      489
AACCACAGGGGAAGGGCACTTGTGCGTCTCCACCTGGTTACCACAGTCTCCATGGGTCT 548
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Db      553 --CCCGAGGGGCAGAAC----GTCACCCT--CACCTG-----
CAGGCTCTTGGGCCCT 597

Qy      549 TTTGCC-----GTGACC----
ACAAATAAAGGAAACACTCATCACTAGTATCT 592
          | | | | | | | | | | | | | | | | | | | | | |
|
Db      598 GTGGACAAAGGGCACGATGTGACCTTCTACAAGACGTGGTACCG--

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CAGCTCGAGGGGCG 655

Qy 593 AAGT-CGGGCTT-  
TACAGTAACTATGCACCTTCTGTGTGCTTCACCTCACTCTCTA---- 646  
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Db 656 AGGTGCAGACCTGCTCAG-AGCGCCGGCCCATC-----  
CGCAACCTCACGTTCCAGGAC 708

Qy 647 CTTCAAACAGC-  
CCATGGAGGGAGGTATTATTATACTCCTTATGTTGACAGTGAAGAATC 705  
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Db 709 CTTC-ACCTGCACCATGGAGG-----CCACC--  
AGGCTGCCAACACCAGCCA 752

Qy 706 TGA---  
GGCCCAGAGAGGTTGGGGACTTGAGTAAAGTCACACAGCCCTGAGAGGCAGGAC 762  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 753 CGACCTGGCTCAGCGC---CACGGGCTGGAGT--CGGC-CTCCGACC-----  
AC 795

Qy 763 CAGGGTTCCAT-  
TCCTGCTCTATCCAGTTCCAAGCCCTTGTGTTTTCCATTATGTTTAG- 820  
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|  
Db 796  
CATGGCAACTTCTCCATCACCATGCGCAACCTGACCCTGCTGGATAGCGGCCTCTACTGC 855

Qy 821 TGCCTCTTTG-----CTAACAGCAACA-TCTG----CAAGAT---TTGTG--  
TTGGTT 863  
| | | | | | | | | | | | | | | | | | | | | |  
Db 856  
TGCCTGGTGGTGGAGATCAGGCACCACCACTCGGAGCACAGGGTCCATGGTGCCATGGAG 915

Qy 864 TTGATGGAGAACTCTAGCT-----CATCCACATGC-TAGTG--  
CCCAAGTGGTGA 911  
| | | | | | | | | | | | | | | | | | | | | |  
Db 916  
CTGCAGGTGCAGACAGGCAAAGATGCACCATCCAACCTGTGTGGTGTACCCAT----- 967

Qy 912 GGGGCCACCTCAGCAGGTGGGT-----  
TCTGAATGCAGCCAAGGCTGTCCCCGCAATGGG 966  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 968 ----CCTCCTCC-CAGGAGAGTGAAAGTAAGGGACCAACCT---CTTGCCCC-  
TTTTGGG 1018

Qy 967 TGAGACTC--GCTCCAACCTGCCCCG--  
CCTCAGAGCAGGTGCCTAAGTCCTCCCTGGCAC 1022  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1019 T---TCTCTGTTTTCTTCTGTCTCATCCT----GCA----  
CCCAGACCCTGTTTGAAC 1067

Qy 1023  
TGGCAGGCCTTACCTCACATTGCTAAATTAAAGCAATGCAATTCCTCTTGGGTAAGAGGA 1082  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1068 T--CTGGCCTCATCACCC-----CAAGCCCT-  
CAGAACCCCCCGG----- 1104

Qy 1083  
ATTCTCTCTTCTTTACTAACTGATCCCCAGCAAGGAAATAAAATGTTAGGCTTTAAAAAT 1142  
||||| ||| || ||| | | || | |||

Db 1105 --TCCTCCTCCTTTTCT-GCTGCTGCACATCCC-----  
TTCTGCTT----- 1142

Qy 1143 CCCTACTTTGTCATATCAGACTATATTCTAAACTATATTTGAGCGAAACCTGTCAT-  
TG 1201  
||| ||| || ||| | | | | | || ||| |||

||  
Db 1143 -CCTCCTTGGTGCAATC--CCCAGAAGCCCACTCT-----  
CCTTCCATCTG 1185

Qy 1202 CGTCT--AATTTCAAATATAC-  
AGAATCTCCTTAAGAGCTGTTGCCTTATTTTTTTGTAA 1258  
| ||| | | || | | || |||| | ||| ||||| |

|  
Db 1186 C-TCTGGAGTCTCTGCTCCTCTTGACTCTCTGGAGTGGCTG-TGCCTTG-----  
GCAG 1236

Qy 1259 AGCCTCTCTGACATCAAATGGGGAGAAATGGTGGCACCTCCAGACA-----  
CC 1306  
| | | | | | || || | ||| |||| ||||

||  
Db 1237 TGAC-CTTTGGC--CA----GGGCAA----GTG---  
CCTCATGACAGGTACTGGGTGCCC 1282

Qy 1307 CT-  
GAAACTACACACCATTTCTTCCCTGCTCAGCTTCTGCTCAGGAGTTCTGTGAGCTAT 1365  
| | | ||| || ||||| || | || | ||| |||

|  
Db 1283 CAGGCAGCTAAGTGCCG-----CCCTGCCCA---CCAGCCCC-----CTATG-  
GCT-T 1325

Qy 1366 GGGAAGGCCATTGTTGTATTTG-  
CTACTTTTACTTTTCATCTTCTCTGCTGTAG----- 1419  
||||||| ||| | || | || | | | |||| || |

Db 1326 GGGAAGGCTGGGGTCTCTTGGCCAACAGGGTGAAACCCCAT-  
CTCTACTAAAAACACA 1384

Qy 1420 -----AGCCATTTAATGT-----  
TATTGTTCATATGCTGCTGGTGAGGTAAAGGT 1463  
|||| | || | | || | ||| || ||||

|||  
Db 1385 AAAATTAGCCAGGCATGGTGGTGC GCGCCTGTAGTCCCA-  
GCTACTCAAGAGGCTGAGGC 1443

Qy 1464 GGGTCCGGGTGCCTT---CCCAGGGGTTAGAGGATGTTCAAAGGGCCGATTT----  
CAGC 1516  
| | | ||| ||| || || |||| || || | |||| | |

|  
Db 1444 AAG--AGAATCGCTTGAACCCGGGAGTCAGAGGTTG--  
CAGTGAGCCGAGATCGCGCCAC 1499

Qy 1517 AGGAGTTCAGAGGGCTTATGATGGATGGTGAGAGATT---  
TGACAACCACCAGAGCAC-- 1571  
| | | ||| ||| ||| | | ||| | | ||| | | | | |

Db 1500 TGCACTCCAGCCTGCT-----  
GATAGAGCAAGACTCCATCTCAAAAAAACAACCCAA 1552

Qy 1572 -ATGTGCTCTGACCCTCTCCTGGGCATTGGT--TCCTGCTGGTAC-  
CGGGCGGTTTCAGAC 1627  
|| ||| ||| | | |||| || ||| | | ||| |||| || |  
||||  
Db 1553 AATTTGC-CTGGCATGGTGGCAGGCATCTGTAATCC--  
CAGCTACTCGGGAGGCTGAGAC 1609

Qy 1628 CTTCAAATAGGTTGCTTTCAAAGAGCTTTTCAGGCACTTAT-----  
TGAGAATTAATGTT 1682  
| | | |||| | | | |||| | | ||| ||  
Db 1610 ATGAGA----GCTGCTTGAACCTGGG-----  
AGGCAGAAGTTGCAGTGAGCCGAGATCAC 1660

Qy 1683 TAAACAGACATAATAGCCTAGATGA-----AC----  
TCCCAAGAGATCTATTAAAT 1729  
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||||  
Db 1661 ACCACTG-  
CACTCCAGCCTGGGTGACAGAGCGAGACTCTGTCCCAAAAAATCAAAAAAT 1719

Qy 1730 --CTTGTGG----GCTGAA-----TAAATATCTCGTGCAGGAC-  
TGTGCAACAGTAGC 1775  
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Db 1720 CACTTTTGGTAGAGATGCACTCTCGCTATGTTGCCAGGCTGGTCTTGAACCTCTG-  
GGC 1778

Qy 1776 CCA---GAGCATCCTGCCTGTGGGCATCCACCTCCCAGGTGAGGG-----  
CAGTGGGAAG 1827  
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Db 1779 TCAATTGATCTTCCCACCT-TG-----  
ACCTCCAAAGTGCTGGGATTACAGGTGTGAG 1830

Qy 1828 CTGGCCCGAC-GGCAGCCAGAACTTGTT-TCTCACCTCCCACCAGCA-  
ACCCCCACCCA 1884  
| | | | | | | | | | | ||| || | | |  
|  
Db 1831  
CCACCATGCCTAGCCTCAGGAATTCTTATAAGAACTCTATGAAGTAGGCATCACCATCT 1890

Qy 1885 ACTCTGGGCCCCAGGCACACGAAGCACAAGT-----  
CTCAGGGGACCATTCCCACAT 1936  
|||| ||| || | || || | || || | ||| |  
|||||  
Db 1891 TCTCTGTATCCATGGAAAGAGAGGC-  
CTAGAGATGTATGCTAACTTGCCCAAGCTCACAT 1949

Qy 1937 TG----GGGGATC----CTGAGG----GAGC-----CC-----  
ATCACCGCCTCTT 1970  
| ||| | | ||| | |||| || | | | |  
||  
Db 1950  
AGCCCAGGGTAGCATAGCTGGGATGTTGAGCTGAGGCCGGAGGAGAAGTAGCAGTCGCTG 2009

Qy 1971 GCATA-CA-ACTGTC--CACTAGG-----AGGCAC--  
GCC----- 1999  
||| | || | | | ||| || |||  
Db 2010  
GCAGAGCACACAGGCTGCTCTGGGGGATGAGCTGGTGCGTTTAAGGAACAGGCCAGCACT 2069

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Qy          2000 -----CAGTG-----TGGGAGAGATGT-----ATGGTCT-----
TGCCTTCCA 2032
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||
Db          2070
GGCATTTCGCAAGCAGTGGGGAAGGGGAGAGATGCCGAGGTGGTCAGTATCCTGACTTTCA 2129
Qy          2033 ----
CCTGTAAAAAAGTGCACATATGCAAGCCATTTCGACTCTGGAAGTGCATGCCGTGAA 2088
|||
||
Db          2130 GAGGCCTTTTTTT---TGTTTGTTTTAAT---TTTTGCTAGATTGATAT-----
TAAA 2175
Qy          2089 AACTCCTAATGGTGTGGAACCTA--
GTTTGAATTTGAAATCACGCCGCATGCACAAAGGG 2146
|||
|
Db          2176 AACTC---ATGTGGAGGAACTCAAGGAATG-TTTAGAAG----
ACCAAAAGTCCCAATG 2227
Qy          2147 ACAGGCCCAGGCCCCGAC-----CTCAGGTCA-TCC-----
GC 2177
|||
|
Db          2228
ACAGGAACAAAAGCAACCAATTTTTAACTTTCTTCTCATTCTGTTTTTCATTGATTTT 2287
Qy          2178 CCGCTGGCTGCAGAGCAT---CCCTGGGAG-CCAAGGCGA-----
GGCCCGTGGAGC- 2225
|||
|
Db          2288 CCAC---
ATGTAGTCCTTTTGTCTCAGGAAGTCTTTGGGGAAATTAAGGATCTTTGAAGCT 2344
Qy          2226
CTGAGCTTTGTGTAGCTCGAGCTTTGTGTAGCTCGTGCACCTTATTATGC----- 2274
|||
Db          2345 CTGAAATAGGT---GATC-
AGGTTAGTGGTGTCTGTCTAGCTGTCTAAGAGGTTGGAATA 2400
Qy          2275 -ACCACCTCCCTTCAGTCAC--CACTCCT-----CTTCCTC-CGCCAT-----
CC 2315
|||
Db          2401
GAACTACTCAAGATAGTCACGAAAATACTGAAAGTTTGATTTTTCTTTCCATATTTGAAT 2460
Qy          2316 TCATTTATACTGATTGC-----
ACACCCCCCGCTCAAACA-- 2350
|||
Db          2461
TAATTTTTTCTGTTTGACTGGAAGGGGTTTTTGTATAACTAAACCTCAGCGCATAAAGG 2520
Qy          2351 -----ACAATGTCC-----TTATTATGATGACCAT----CTCG-----
TAGT 2383
|||
|
Db          2521
AGATTTTAAAGGAGCACATGATTTAGTGGGTGGGCCATGAAACTAGAGATGGGATTTGGG 2580

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Qy          2384 GGTACAT---TCCATTCT--ATTTAAGGTAAGCC-----CAA---
AGCC----- 2420
      |||  ||   ||  ||   ||   |||| |       || |         | |    |||
Db          2581
GGTGAATTTGTCAATATCTGGATTTTAAATCCAGACATCTCTGCTAACGAGCCTTTGGTAA 2640

Qy          2421 --CACTTTTG---ATTTTCTC-----
GACTGTCCGAGAAAAGTTGTGT 2459
      |||| |   ||| |||           | ||| |  || |  |||
Db          2641 GTCATTTCAGATACTTTTCCTCCTTTTTACAAAGAGAGGGCTGGCTTAGTTAT-
TTGCCA 2699

Qy          2460 AAGC-----GCCTGCGTTCTTCTGG---
GTTTGGCTAGATAGGGTTGTGTCCCTCT 2507
      |||  ||||  |||  |  |  |  ||  ||   ||| ||  |||
|||
Db          2700 AAGCCCCCTTCCAGGCCTGAATTCCACAAGTACGATTTACT--
GTAGTGCTTATCACTCT 2757

Qy          2508 -----ATGGAATGGAG----
AGTGATGTGGGCAAGGGTGTCATTTTCTCGCAC 2552
      || |  ||||  || ||   | | ||  | | | ||  |||
||
Db          2758 TTCATGTCACAATAGCGTGGAGCATTAGAGA-AAAGCCTAGACTTTTAGTTGATAGC-
CA 2815

Qy          2553 AT--
ACAACTCACTGAGGATGCTTCTGTAGAAGTGAGAAACACGATGAGTACATTTCAGAA 2610
      |  |  |  ||| |||        ||  ||   ||  | ||   ||| |  |  |
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Db          2816
GTTGAAATATCATTGATAGAATTTTAGTTTTAGGAAAAATTGGTTTGATTCTAGCTTTA 2875

Qy          2611
TTACAATAACTCACTCTCACTGGGTAACTTCTCATGATAGATTTGTATGATCAATACGGG 2670
      |||| ||           | |||| |  |  ||   | | |  | |||  |  |
|
Db          2876 TTA CTAT-----TAGGTATGTGAGCTTGGGCAAATCGCTTAATCTTT--
GAG 2920

Qy          2671 TCTATTTTATGTC-AACTGAACACTGTAGGGTA-----CC----
TTCCAGTCTTTT 2717
      |||| |||| |  ||  || ||  ||  |||| ||           ||   ||||| ||
|
Db          2921 TCTAGTTTTCTCTCAAAATGAGAACATTAGGCTAAATGATTTCCGAGTTTCCAG-
CTAGT 2979

Qy          2718 TCAAGATTGTTAAATTGAGACAAGTAATTGAA-
TAATTTGTCCATTTTTATTTTAAAAA 2776
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||
Db          2980 CCTAGAGTTCTATATTTCTACA--
TAGTTGAATTATTTTATCATGCTGTTGCTGGGGAAT 3037

Qy          2777 AAG-----TGAATGGACTGA---AATGTTAAATGTGAATGTACAT--
TTCTTAA 2820
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|||
Db          3038

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Db 2543  
AATCATGTGCTCCTTTTAAATCTCCTTTATGCGCTGAGGTTTTAGTTATACAAAACCCC 2484

Qy 563 -----AAATAAGGAAACACTCATCACTAGTAT-----  
CTAAGTCGGGCTTTACAGTAA 611  
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|||||

Db 2483 TTCCAGTCAAACAGAAAAAATTAATTCAAATATGGAAGAAAAATCAAACTTT-  
CAGTAT 2425

Qy 612 CTATGCACCT-TC-TGTGTGCTTCA----CCTCACTCT----CTACT-  
TCAAACAGCCCA 660  
| | || || || || |||| || |||| | || || || || |  
|

Db 2424  
TTTCGTGACTATCTTGAGTAGTTCATTTTCCAACCTCTTAGACAGCTGACAGACACCAC- 2366

Qy 661 TGGAGGGAGGTATTATTATACTCCTTATGTTGA-CAGTGAAGAATCTGAGG---  
CCCAGA 716  
|| | || | || | | || | |||| || | ||||  
|

Db 2365 -----TAACCTGAT-  
CACCTATTTTCAGAGCTTCAAAGATCCTTAATTTCCCCAAA 2317

Qy 717 -----GAGGTTGGGGACT---TGAGTAAAGTC-----  
ACACAGCCCTGAGAGGC--- 757  
||| |||| || | || || | |||| |||| |

Db 2316  
GACTTCCTGAGCAAAAGGACTACATGTGGGAAATCAATGAAAACAGGAATGAGAAGAGAA 2257

Qy 758 ----AGGACCAGG-----GTTCCATTC-----CTGCT---  
CTATCC 786  
| | || |||| || || || |

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Db 2256  
AGTTAAAAATTGGTTGCTTTTGTTCCTGTCATTGGGGACTTTTGGTCTTCTAAACATTCC 2197

Qy 787 ---AGTTCCAAGCCCTTGTGTTTTCCAT-TATGTTTAGTGCCTCTT--  
TGCTAACAGCAA 840  
||||| | || |||| || | ||| || | ||||

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Db 2196 TTGAGTTCCTC-  
CACATGAGTTTTTAATATCAATCTAGCAAAAATTAAACAAACAAAAA 2138

Qy 841 ----CATCTGCAAGATTTGTGTTGGTTTTGA-----  
TGGAGAACTCTAGCTCATCCACA- 890  
| |||| || || | || | | |||| | ||||

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Db 2137 AAGGCCTCTGAAA-----GTCAGGATACTGACCACCTCGGCATCTCTC-  
CCCTTCCCCAC 2084

Qy 891 ----TGCTAGTGCCCAAGTGGTGG-AGGGGCC---  
ACCTCAGCAGGTGGGTTCTGAATGC 942  
||| | |||| |||| || | || | || || || | |

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Db 2083 TGCTTGCGAATGCC--  
AGTGCTGGCCTGTTTCCTTAAACGCACCAGCTCATCCCCAGAGC 2026

Qy 943 AGCC--AAGGCTGTCCCCGCAATGGGTGAGACTCGCTCCAACCTGC-  
CCGCCCTCAGAGCA 999

||  
 Db 2025 AGCCTGTGTGCTCTGCCAGC-----GACT-  
 GCTACTTCTCCTCCGGCCTCAGCTCA 1976  
  
 Qy 1000 GGTGCCTAAGT---CCTCCCT-GGCACTG---GC--AGGCC--  
 TTACCTCACATTGCTAA 1048  
 || | | | |||| || | | || | || | || | ||  
 Db 1975  
 ACATCCCAGCTATGCTACCCTGGGCTATGTGAGCTTGGGCAAGTTAGCATACATCTCT-- 1918  
  
 Qy 1049 ATTAAAGCAATGCAATTCCTCTTGGGTA---AGAGGA-----  
 ATTCTCTCTTCTT----T 1096  
 | || | | | || | || | || | || | || | ||  
 |  
 Db 1917 ----AGGCCT--CTCTTTC-  
 CATGGATACAGAGAAGATGGTGATGCCTACTTCATAGAGT 1865  
  
 Qy 1097 ACTAACT--GATCCCCAGCAAGGAAATAAAATGTTAGGCTTTAA----AAATCCCT--  
 AC 1148  
 || | || || | || | | | || | || | || || ||  
 ||  
 Db 1864 TCTTATAAGAATTCCCTG--AGGCTAGGCATGGT--  
 GGCTCACACCTGTAATCCCAGCAC 1809  
  
 Qy 1149 TTT----GTCAT-  
 ATCAGACTATATTCTAAACTATATTTGAGCGAAACCTGTCATTGCG 1203  
 ||| |||| | || || | | | | | | || | ||  
 ||  
 Db 1808 TTTGGAGGTCAAGGTGGGAAGATCAATTGAGCCCAGG--  
 AGTTCAAGACCAGCCTGGGCA 1751  
  
 Qy 1204 TCTAATTTCAAATATACAGAATCT-CCTTAAGAGCTGTTGCCTTATTTTTTTTG---  
 TAAA 1259  
 | || | | || | || || || | | || || || || || ||  
 |  
 Db 1750 AC--ATAGCGAGAGTGCA-TCTCTACCAAAAGTGATTTT--  
 TTTGATTTTTTTGGGACAGA 1696  
  
 Qy 1260 GCCT--CTCTGACATCAA--  
 ATGGGGAGAAATGGTGGCACCTCCAGACACCCTGAAACTA 1315  
 || || |||| || | | || | | | |||| | || | | | ||  
 ||||  
 Db 1695 GTCTCGCTCTGTACCCAGGCTGGAGTGCAGTGGTGTGATCTC--  
 GGCTCACTGCAACTT 1638  
  
 Qy 1316 C--ACACCAT--TTCT-----TC-CCTG-CTCAGCTTC-----  
 TGCTCAGGAGTTCTG 1357  
 | | || || | || | || || || || || || || || || || ||  
 |  
 Db 1637 CTGCCTCCCAGGTTCAAGCAGCTCTCATGTCTCAGCCTCCCAGTAGCT-  
 GGGATTACAG 1579  
  
 Qy 1358 TGAGCTATGGGAAGGCCA-----TTGGTTGTATTT-----  
 GCTACTTTTACT 1399  
 || | || | || || || || || || || || || || || || ||  
 ||  
 Db 1578  
 ATGCCTGCCACCATGCCAGGCAAATTTGGGTTGTTTTTTTTTGGAGATGGAGTCTTGCTCT 1519

Qy 1400 TTCATCTTCCT---CTGCTGTAGAGCCATTTAATGTTATTG--TCATATG-  
CTGCTGGTG 1453  
||| | || ||| || | || || | | || | | | |  
Db 1518  
ATCAGCAGGCTGGAGTGCAGTGGCGCGATCTCGGCTCACTGCAACCTCTGACTCCCG--- 1462

Qy 1454 AGGTAAAGGTGGGTC-CGGGTGCCT---TCCCAGGGGTTAGAGGATGTTCAAAGGGC-  
CG 1508  
||| | | | || | |||| | | | || | | | ||  
||  
Db 1461 -GGTTCAAGCGATTCTC--TTGCCTCAGCCTCTTGAGTAGCTGGGACTACA---  
GGCGCG 1408

Qy 1509 ATTTCAGCAGGAGTTTACAGAGGGCTTATGATGG-----  
ATGGTGAGAGATTTGACAACCAC 1563  
| | | | | |||| || | | | | | | | | |  
|  
Db 1407 C-ACCACCATGCCT-----GGCTAATTTTTGTGTTTTTAGT-  
AGAGATGGGGTTTCACC 1356

Qy 1564 CAG--AGCACATGTG---  
CTCTGACCCTCTCCTGGGCATTGGTTTCTGCTGGTACCGGGC 1618  
| | || | | | | | | | | | | | | | | |  
||||  
Db 1355 CTGTTGGC-CAAGAGGACCCCCAGCCTTC-CCAAGCCATAGGGGGCTGGTGG-  
GCAGGGC 1299

Qy 1619 GGTTTACAGACCTTCAAATAG-----  
GTTGCTTTCAAAGAGCTTTTACAGGCACTTATTGAG 1672  
|| | | || | | | | || | | | | | | | |  
|  
Db 1298 GGCACCTAGCTGCCTGGGGCACCCAGTACCTGTCATGAG-GC--  
ACTTGCCCTGGCCAAA 1242

Qy 1673 AATTAATGTTTA--AACAGACA----TAATAGCCTAGATGAAC----  
TCCCAAGAGATCT 1722  
| | || | |||| || | | | | | | | | | |  
Db 1241  
GGTCACTGCCAAGGCACAGCCACTCCAGAGAGTCAAGAGGAGCAGAGACTCCAGAGCAGA 1182

Qy 1723 ATTAAATCTTGTGGGCT----GAATAAATATCTCG-----  
TGCAGGACTGTGCAACA 1770  
|| ||||| | | | | | | | | | | |  
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Db 1181  
TGGAAGGAGAGTGGGCTTCTGGGGATTGCACCAAGGAGGAAGCAGAAGGGATGTGCAGCA 1122

Qy 1771 GTA-----GCCCAGAGCATCCT----GCCTGTGG----GCATCCA-----  
CCT 1805  
| | | | | | | | | | | | | | |  
||  
Db 1121  
GCAGAAAAGGAGGAGGACCGGGGGTTCTGAGGGCTTGGGGTGATGAGGCCAGAGTTCCA 1062

Qy 1806 CCCAGG-----TGAGGGCAGTGGAAGCTG---  
GCCCGACGGCAGCCAGAA 1848  
||| |||| || | | | | | | | | |  
|||  
Db 1061  
AACAGGGTCTGGGTGCAGGATGAGGACAGAAGAAAACAGAGAACCCAAAAGGGGCAAGAG 1002

Qy 1849 CTT-GTTTCTCAC---CTCCCACC-----  
AGCAACCCCCCACC----- 1882  
|| || || || | | | | | | | | | |

Db 1001  
GTTGGTCCCTTACTTTTCACTCTCCTGGGAGGAGGATGGGTACACCACACAGTTGGATGGT 942

Qy 1883 -CAACTCTGGGCCCCAG---GCACACGAAGCACAAAGTCTCAGGGGACCAT--  
TCCCACAT 1936  
|| || || || | | || | | || | | || | | || |

Db 941 GCATCTTTG----CCTGTCTGCACCTGCAGCTC-----  
CATGGCACCATGGACCCT--- 895

Qy 1937 TGGGGGATCC---TGAGGGAGCCC-ATCACCGCCTCTTGCATACAACTGT-----  
CCACT 1987  
| | || | || | || | || | || | || | || | || |

Db 894 ---GTGCTCCGAGTGGTGGTGCCTGATCTCCACCAC---  
CAGGCAGCAGTAGAGGCCGCT 841

Qy 1988 AGGAGGCA-----CGCCCAGTGTGGGAG-AGATGT----ATGGTC--  
TTGCC-- 2027  
| || | || | || | || | || | || | || |

Db 840  
ATCCAGCAGGGTTCAGGTTGCGCATGGTGTGATGGAGAAGTTGCCATGGTGGTTCGGAGGCCGA 781

Qy 2028 TTCCA-  
CCTGTAAAACTGCACATATGCAAGCCATTTGCACTCTGGAAGTGCATGCCGTG 2086  
|| || || || || | | || | | || | || | || |

Db 780 CTCCAGCCCGTG-----GCGCTGAGCCAGGTCGTG-----  
GCTGGTGTGGCAGCCTGG 732

Qy 2087 AAAACTCC----TAATGGTGTGGAACCTTAGTT--  
TGAATTTGAAATCAGCCGCATGCAC 2140  
|| || | || || | | | | || | || | || | ||

Db 731 TGGCCTCCATGGTGCAGGTGAAGTCTCTGGAACGTGAGGTTGCGGATGGGCCG-  
GCGCTC 673

Qy 2141 AAAG--GGACAGGCCCAGGCC-----GACCTC-----AGGT--  
CATC 2174  
|| || | | || || || | || | || |

Db 672  
TGAGCAGGTCTGCACCTCGCCCCCTCGAGCTGCGGTACCACGTCTTGTAGAAGGTCACATC 613

Qy 2175 -CGCCCGCTGGCTGCAGAGCATCCCTGGGAGCC--AAGGCGAG-----  
GCCCGT 2220  
|| || || | || | || | || || || | || | || |

Db 612 GTGCCCTTTGTCCACAGG----  
CCCAAGAGCCTGCAGGTGAGGGTGACGTTCTGCCCT 557

Qy 2221 GGAGCCTGAGCTTTGTGTAGCTCGAGCTTTGTGTAGCTCGTGCA--  
CTTATTATGCACCA 2278  
| | | | | | | | || | || | | | | | |

Db 556 CGGGACAGACATACAGGAATACG-GC---  
GTGGCGACCTTGAAGGCTGCCACCGACCT 501

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Qy          2279 CCTC-----CCTTCAGTCACC--AC---TCCTCTTC--CTCC-
GCCATCCTC 2317
          |||
|
Db          500 GCTCAGAGAGAGGAGAGGCC--
CTGTACCTGACTGATCCAGTGCTACTCCTGGCAACCCC 443

Qy          2318 A-----
TTTATACTGATTGCACACCCCCCGCTCAAACAACAATGTCCTTAT 2363
          |
Db          442 AGAGCGGGGAAGAACCTTAGCCT--CTGCTACTTCCCAGC-
CACAGGCCAGGGGCAT--G 388

Qy          2364
TATGATGACCATCTCGTAGTGGTACATTCCATTCCCTATTTAAGGTAAGCCCAAAGCCCAC 2423
          | | ||||| || | ||
|||||
Db          387 TCAGCTGACC-TCCCTAAG-----AC-TGCCTT--CTGCATTGTGTT---
CACAAACCCAC 339

Qy          2424 TTTTGGATTTTCTCGACTGTC-CGAGAAAAGTTGTGTAAGCG---CCTGC-----
GTTCT 2474
          | | | |||| | ||| |||| || | ||
||
Db          338 T-----
CCATCCTAGGCTGTTGTAGGGGGAGTCACAGAAGCTTCCCCAACTAGGGGTGCT 284

Qy          2475
TCTGGGTTTGGCTAGATAGGGTTGTGTCCCTCTATGGAATGGAGAGTGATGTGGGCAAGG 2534
          |||| | ||| || |||| | | || |||| || ||||| | |
|
Db          283 CCTGGAT---GCTGGACAGGGCAGGGAGAGACT-TGGA--
GGGCAGTGATGCAGTCGGGT 230

Qy          2535 GTGTCATTTTCTC-GCACAATACAACCTCACTGAGGATGCTT---
CTGTAGAAGTGAGAAA 2590
          |||| | || | || || | |||| |||| | ||| ||
Db          229 GTGTCC----CTCTTCCCAGTAGA-----GTATATGCAAAACCTGTTG-
GGTGGGAGG 182

Qy          2591
CACGATGAGTACATTGAGAATTACAATAACTCACTCTCACTGGGTAACTTCTCATGATAG 2650
          || | || | || || | || | || | || || || | ||
Db          181 CAGGTTGGGGA---GCAGGAAGGCTGTTTTCGAAC-----AGCAGCTCCT--
TGT 138

Qy          2651
ATTTGTATGATCAATACGGGTCTATTTTTATGTCAACTGAACACTGTAGGGTACCTTCCA 2710
          ||| | || || |||| | |||| | || |
|||||
Db          137 CCTTGGCCGCTCTGTAGGGGCC-----ATCAAC--ACCTCT-----
GCCCTTCC- 95

Qy          2711
GTCTTTTTCAAGATTGTTAAATTGAGACAAGTAATTGAATAATTTGTCCTATTTTTATTT 2770
          | |
Db          94 -----TAC-----
TCCTA----- 87

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Qy 2771  
TAAAAAAGTGAATGGACTGAAATGTTAAATGTGAATGTACATTTCTTAATTGCAATTTT 2830  
||||||| ||| | | | |||| |  
Db 86 -----GGACTGAA-----CATG-  
CCTTCCCATCCTTGCCAGGGA 54

Qy 2831 TCTACTGAGTGTGTTGCACTATACTTTCTGGAATCTTATTTAA---  
CAAAAATAAAGGGAA 2887  
| ||| || | |||| || | | | || | ||  
Db 53 GC-ACTAAGAG--AGCAC-----CTG----  
CGTGTGCAAGGCCTGGGCCAGTAGGCC 9

Qy 2888 AAAATTGC 2895  
|| | |||  
Db 8 AACAGTGC 1

# RESULT 3

US-10-478-914-21  
; Sequence 21, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 21  
; LENGTH: 3589  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-21

Query Match 36.5%; Score 6279.5; DB 1; Length 3589;  
Best Local Similarity 42.9%; Pred. No. 0;  
Matches 1607; Conservative 0; Mismatches 1125; Indels 1015;  
Gaps 215;

Qy 2 TGAAATCAGGAAATCAGGCCGGGCGC----  
AGTGGCTCATGCCTGTAAGCCCAGCACTTT 57  
|| | || | |||| | | | || |||| | ||| |||| |  
|||  
Db 7 TGGATTC--GCCATCATTTTGCACACTGCGAGGGGCTCC-GTGTGTGCGCCCTG-  
TCTT- 61

Qy 58  
GGGAGGCGGAGGCGGGTGGATCCATTGAGGTCAGGAGCTCAAGACCAGCCTGGTCAACAT 117  
| | || || || |||| || || | |  
|  
Db 62 -----GTCTGG-----CC-----GTC-----CTCAT-  
CCCTTCCCCACCCCT 94

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Qy          118 GGTGAAACCCCGTCT--CTACTAAAAATACAAAAAAAAAATTAG--CTGGGC-
GTGTTGG 172      |   |   || ||| |   || | |||   |   |   || | |   |   || ||| ||||
||
Db          95
GCCGCCACTCCGACCCGCTCCCAAAGTGCTTCACAATAGTCGGTCCTCGGCGGTGTAGG 154

Qy          173 CGG-GAGCCTGTAGTCCCAGCTACACGGGAGGCTAAGGTGGGAGA-----
ATTGCTTGA 225      |   |   || |   ||||   || |   |   |   |   |||||   |   |||
Db          155 CTGCGCACCCAG--GTCCACACTTAAGCGAAATCAA-----
GGAGACCCCCCTTCTACTTCT 207

Qy          226
ACCCGGGAGGCGGAGGTTGCAGTGAGCTGAGATTGCACCATTGCACTCCAGCCTGGGCGA 285
        |||   |   |   |   |   || || |   |   |||   ||||   ||| |
||
Db          208 ACCTTTGGGTTTGGTGCT-CAATGCGAAGC---TGC-----TGCAACTCAGAC---
ACGC 255

Qy          286 CAGAGCAAGACTCTCTCAAAAAAAAAAAAAAAAAAGAAAGAAAGAAATCAGAAAATC---
GAC 342      |   ||   |   ||||   || |||||   |   |||||   |   |   || |   ||   |
|
Db          256 CTAAGTCA-ACTCATGCAGAAAAAGGAGAAAAAGTT--
TTGGTATACAAATGCTCTCAGTC 312

Qy          343 CACAGTGGTAGCCACCTGGCCTAA-----TGCTG-----
TGTTTTTGTACCT 384      ||   |   || ||||   ||| ||   |||||   |   |   |||
||||
Db          313 CA----
GCCAGACACCAAGCCGAAAGGTTGTGCTGGCTGCAACCGAAAGATCAAGGACCG 368

Qy          385 G-----ACAGGGGTCACT----
CATTTTAGGCACAACCTCCTTCATTCTTTGTGAAATTAG 435
        |       |   |   ||||   |   |   ||||   |   || | |   ||||
|
Db          369
GTATCTTCTAAAGGCACTGGACAAATACTGGCATGAAGACTGCCTGAAGTGTGCCTGCTG 428

Qy          436 TGAGTTTC-----CTTCTACCCGT-
CACCAGATTCAATATGTTCTATTA 478
        ||| | ||           || |   || || ||| | |   ||| |   ||
||
Db          429
TGACTGTCGCTTGGGGGAGGTGGGCTCCACCCTGTACACTAAAGCTAATCTTATCCTTTG 488

Qy          479 ATACACCGA-TAAC-----CAC-----AGGGGAAGGGCACT---TGT-----
CGCT 515      ||   || || |   |   |           ||| ||   || ||   |||
|||
Db          489
TCGCAGAGACTATCTGAGGCTCTTTGGTGTAACGGGAAACTGCGCTGCCTGTAGTAAGCT 548

Qy          516 C-TCCC-ACC-----TGGT-----TACCACAGTC-----TCCA-TGGGTCT--
TT 550      |   ||||   ||           ||||   |   |||   |   |   |||   || ||
||
Db          549

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TGTTCCATTTGCTTCTTTGTATTGTTGCATTTAGTACAATCAGTGT 1134

Qy 952 TGTCCCCGCAATGGGTG---AGACTCGCTCCAAGTCCCCGCCCT-----  
CAGAGCAGGTG 1003

| | | | | | | | | | | | | | | | | | | |  
Db 1135 T-  
TAAACTTACTGTATATTTATGCTTTCTGTATTTACCAGCTATTTTAAATGAGCTGTAA 1193

Qy 1004 C---CTA-----AGTCCTCCCTG-----GCACTG-----  
GCAGG 1029

| | | | | | | | | | | | | | | | | | | |  
|  
Db 1194  
CTTTCTAGTAAAGAATTGAAAAGCAAATCTCACTAATGATACACAGATAGATAAAGCAAG 1253

Qy 1030 CCTTACCTC----ACATTGCT--AAATTAAAG-----CAATGCAAT-----  
TCC 1067

| | | | | | | | | | | | | | | | | | | |  
| | |

Db 1254  
TCTATCAACATTAAAAATACTAAAAATAAAGACACACACAGAGCATTTTAGTGACATCC 1313

Qy 1068 TCT-----TGGGTAAGAGGAATTCCTCCTTCTT-  
TACTAACTGATCCCCAG 1112

| | | | | | | | | | | | | | | | | | | |  
Db 1314 ACTACTTATTGCCGCTATGAGTTAGAGTCTATCAGTGTTCTTGTTATAAC----  
CCCCTA 1369

Qy 1113 ----CAAGGAAATAAAATGTTAGGCTTT--AAAAATCCCTAC----  
TTTGTATATCAGA 1162

| | | | | | | | | | | | | | | | | | | |  
|  
Db 1370 TTTTCAGGGGGTTAAAA--  
ATCAGCTTTAAAAAATACATAAAAAATTTTATCTTAAAGCA 1427

Qy 1163  
CTATATTCTAAACTATATTTGAGCGAAACCTGTCATTGCGTCTAATTTCAAATATACAG 1222

| | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 1428 CTTTCATTTTATACCA-  
ACGTGAAAAGTGCCATTTTTAGAATAACTTTAAAGCTTAACAG 1486

Qy 1223 -----AATCTCC-----TTAAGAGCTGTTGCCTTA-----  
TTTTTTTG-- 1255

| | | | | | | | | | | | | | | | | | | |  
Db 1487  
GTTTCCTTTTAAATATCCTTTTTTTGTGTGCTCTTTACTTACACAATGGCTTTGTTTTGCT 1546

Qy 1256 --TAAAGCCTCTCTGACATCAAATGGGGAGAAAT-----  
GGTGGCAC-----C 1296

| | | | | | | | | | | | | | | | | | | |  
Db 1547 TTTTCAGCCAC----  
ACCCCTTATGTGAAGTAGTGCCTTTGGGTATCACGTAAAATTTTT 1602

Qy 1297 TCCA----GACACCCTGAAAC-----  
TACACACCAT----- 1323

| | | | | | | | | | | | | | | | | | | |  
Db 1603 TCCAAAGGGTTACTTTAAAAATCTGTTAC-  
CACAATTATGAGATGATTTTTAAGTGATAA 1661

Qy 1324 -----TTCTTC-----CCTGCTCAGCT-  
TCTGCTCAGGAGTTCTGTGAG---- 1361  
||||| |||| ||| | ||| | || ||| ||| | |

Db 1662 ATTAACTTCTTCTTGTATAAATTCTGCCCAGATCTCTCCACAAGAG--  
CTGAGGGTTTC 1719

Qy 1362 -----CTATGG-----GAAGGCCATTGGTTGTATTTGC---  
TACTTTTACTTTC 1402  
||||| | | | | | |||| | | ||||

Db 1720  
ATAACTTTATGGCTTAATAAATGTATGACACTGAAAAGATTTGAGTGTGAATCTACTGAA 1779

Qy 1403  
ATCTTCCTCTGCTGTAGAGCCATTTAATGTTATTGTTCATATGCTGCTGGTGAGGTAAAGG 1462  
||| || | | | | | | ||| | ||||| |

Db 1780 ATC-----  
ACTATAATGCACATTGAAGCTATGATGGTATTTGAGTAGTGAGGTTACTT 1832

Qy 1463 TGGGTCCGGGTGCCTT----CCCAGGGGTT-----  
AGAGGATGTTCAAAGGGCCGAT 1510  
| | | | | | | | | | ||| || |||||

|||

Db 1833 TTGATCGGAGCAACATAATGCTCATAGAATCTTCTAGAAGAAGAGAAACAAAGG---  
GAT 1889

Qy 1511 TTCAGCAGGAGTTCAGAGGGCTTATGAT----GGATGGTGAGAGATT---  
TGACA----- 1558  
| | | | | || |||| | | | ||||

Db 1890 T---  
GATAAAATGCTGAGAACTAGTGATTATATATTTTTCTGTATTTACCTGACATTTAT 1946

Qy 1559 -----ACCACCAG--AGCAC-----  
ATGTGCTCTGACCCTCTCCTGGGCATT 1598  
| | || | ||| |||| | | ||||| | |

|

Db 1947 TTTAATGTTCAAAAAGTAAACACTTTAAGTTTGATGTGTTTT-  
ACTCTCTCATTGTTTTA 2005

Qy 1599 GGTTCTGCTGGTACCGGGCGGTTTCTAGA--CCTTCA--  
AATAGGTTGCTTTCAAAGAG- 1653  
|| ||| | |||| | ||| ||||| || |||

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Db 2006 AGTAATTGC-----CAACTCAGAATACATCATTCTTAGGCTG-----  
AAATTTGT 2050

Qy 1654 CTTTCAGGCACTTATTGAGAATTAAT-GTTTAAACAGACATAATAGCCT----  
AGATGAA 1708  
|||| | | | | || || || | |||| | |||

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Db 2051 CTTTC---  
CATTTTTTAAAGGTGAAATAGTACTACCTTACGTGATAGCATACAAAGAAGAA 2107

Qy 1709 CTCCCAAGAGATCTATTAAATCTTGTGGGCTGA----  
ATAAATATCTCGTGCAGGACTGT 1764  
| | ||| | |||| || | ||| |||| | | | |

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Db 2108 AGCTCTAGAAA---  
GAGAAATTATGGAGAATGATTATTTAAATTACAATTAAGGAAATGA 2164

Qy 1765 GCAACAGTAGCCCAGAGCATCC----TGCCTGTGGGCAT-

CCACCTCCCAGGTGAGGGCA 1819  
| | | | | | | | | | | | | | | |  
|  
Db 2165 GAATATGATCCCCT---  
CTTCCGAGTTGCCCACAACTTGCTTCTTTGCTTTTGCTCCCT 2221

Qy 1820 GTGGGAAGCTGGCCCCGAC--GGCAGCCAGAACTTGTTTCTCAC--CTCC---  
CACCAGCA 1872  
| | | | | | | | | | | | | | | |  
Db 2222 GT-----AATAGAACTACTTTTCA-  
ACAAATCTAATTTTGACGGCACCGTTAACCATAT 2275

Qy 1873 ACCCCCCAC--CCA ACTCTGGGCCCCAGGCACAC-----  
GAAGCAC 1911  
| | | | | | | | | | | | | | | |  
| | |  
Db 2276  
TTTCACTACAGCAA ACTTAGTGCTATGGGTTTTCTTTTTCTTTGTTTTTTTCTTGATCAC 2335

Qy 1912 AAGTCTCAGGGGAC--CATTCCCACATTGGGGGATCCTGAGGGA----  
GCCCATCACC GC 1965  
| | | | | | | | | | | | | | | | | |  
Db 2336 TTGTAT-AGGAAACAACATTTTC-CAGTGTTATTTGCATATATATTTTGTCTT--  
CCAA 2391

Qy 1966 CTCTTGCA-----TACAACTGTCCACTAG----  
GAGGC----- 1994  
| | | | | | | | | | | | | | | |  
Db 2392  
TATATGCATTACAGATGAAAATTAAATGTTATACCTGAATTCTTGGGTTGGGGCCAAAAT 2451

Qy 1995 ---ACGC-----CCAGTGTGGG-----AGAGAT---  
GTATGGTCTT 2024  
| | | | | | | | | | | | | | | |  
|  
Db 2452  
ATTAAGCTGAAAATAATGCTGGTGTGGATTTGTTTTAAACAAAGCTTTATTATGAACAT 2511

Qy 2025 GCCT-TCCACCTGTA-AA AACTGCACATATGCAAGCCATTTGCACTCTGGAAC-  
TGCATG 2081  
| | | | | | | | | | | | | | | | | |  
| | |  
Db 2512  
GCATGTGAATCTGGATATTGCCTCTTATTTTTAAGAAAATGGTTCTGTGAAAAGTGAATG 2571

Qy 2082 CCGTG-----AA AACTCCTAATGGTGTGGA-ACTT--AGTT---TG-----  
AATT 2120  
| | | | | | | | | | | | | | | |  
| | |  
Db 2572  
ATATGTATTTTTCCAAATGCTTCATGGTTAGGAGTCTTCAAGTTCCATGTTCCCCAGATT 2631

Qy 2121 TGAAATC-AC-GCCGCATGCA---CAAAGGGA-C-----  
AGGCCCAGGCCCGA----- 2162  
| | | | | | | | | | | | | | | | | |  
Db 2632 TGAGATATACTAAAGAAAGAAATTCAAAGTAGCTATTTGGGGCCCA--  
CAAAAATAACT 2689

Qy 2163 -----CCTCAG-GTCATCCGCCCGCTGGCTGCAGA-----GCAT--  
CCCT 2199

Db 2690  
 ATTATTTTAGCCTTAGAGCCTTACACTTGTTCATGAAGAGAAAGGACTTGCATAACCAA 2749

Qy 2200  
 GGGAGCCAAGGCGAGGCCCGTGGAGCCTGAGCTTTGTGTAGCTCGAGCTTTGTGTAGCTC 2259

Db 2750 AATAAACAAAGCAAGACAAATTAA-----AAATATGTGGGG-GAGAGATCAGTGAA--  
 AA 2801

Qy 2260 GTGCACTTATT-ATGCACCAC-----CTCCCTT--CAGTCAC-----  
 CAC----- 2296

Db 2802  
 GTGGTTTTCTTAATGCAGCCCTGCTGGTCCCCATTAAACAATTGCTTGAAATTCACATGGA 2861

Qy 2297 -----TC---CTCTTCCTCCGCCATCCTCATTTA-----  
 TACTGATTG 2331

Db 2862 TGTAATAATTATAATTGTCAGGATCTTATTCAG--  
 ATGATCTTTTAAGGTTTAACTGGTTT 2919

Qy 2332 CACACCCCCGCTC-AAACAACAATGTCCTTATTA--TGATGAC-----  
 CAT 2375

Db 2920  
 TGCTTTTGTATTATCTATATGTCAAATACTTGTAATTGGGAACAAACTTCTCTCAGCTT 2979

Qy 2376 CTCGTAGTGGT---ACATTCCATTCTATTTAAGGTAAGCC---CAAAG-----  
 CCCACT 2424

Db 2980 CTTGAAGTTGTTCAACTATCCTTGCCACT----  
 GGAAGACCAACAAGGTTTTCACTGCT 3035

Qy 2425 TTTGGATTTTCTCGACTGTCCGAGAAAAGTTGTGTAAGC----  
 GCCTGCGT----- 2471

Db 3036  
 TTTTCTTTTACATAATATGCTGAGAATTATTTCTTATGCTTTTTACTACAAACAAAATTA 3095

Qy 2472 -TCTTCTGGGTTT-----GGCTAGATAGGGTTG---TGTC-----  
 CCTCTATGGAA 2513

Db 3096  
 CTCACCTGGATTAAAGATTAAAGGCCTTAATCTGTTTAGATTATCTTTAATCTCCATGAAA 3155

Qy 2514 TGGAGAGTGATG--TGGGCAAGGGTGTCAATTTTCTCG-  
 CACAATACTCACTGAGGAT 2570

Db 3156  
 TCGTGAAATAAGACAAGAATAGTGTTTCAGCTGTAGGCCATTTTACAGCTAATTGCCCAT 3215

Qy 2571  
 GCTTCTGTAGAAGTGAGAAACACGATGAGTACATTGAGAATTACAATACTCACTCT--- 2627

Db 3216 AAAT-TGTAGCATTTATTGACCTGA--AGTACTAAGCTAATTGTCTTGACT-  
ACTCAAAG 3271

Qy 2628 -CACTGGGT-----AAC-  
TTCTCATGATAGATTGTGATGATCAATACGGGTCTATT-- 2676  
| | | | | | | | | | | | | | | | | | | | | |  
Db 3272 CCCCTGAATTGTTGTCAACTTTCCCCT--TTGTGTTGTGTAGCCCTAAC--  
GTCATTTAG 3327

Qy 2677 -TTTATGTCAACTGAACACTGTAGGGTACCTTCCAGT----CTT---TTTC-----  
AAG 2722  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 3328 CTTGTTGTCTGATGCCTCCAGTAGGACACC-  
TCCGATGGAGCTTTGATTTCTGAGCAGCG 3386

Qy 2723 ATTGTTAAATT-----  
GAGACAAGTAATTGAATAATTTGTCCTATTTTTTA----- 2767  
| | | | | | | | | | | | | | | | | | | | | |  
Db 3387 AAAGCTCCCTTCCTAAGATGCA---TCTCGCATAGGCTG-  
CCTATGATGAAGGACCGTGC 3442

Qy 2768 -----TTTTAAAAAAGTGAATGGACTGAAATGTT-  
AAATGTGAATGTACATTTCTTAA 2820  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 3443 ACCTCCACTCCAACAGAGTG-CTGAGTTTAAAAGTTGACCTGTGTTTGTA-ATTTCC--  
AC 3498

Qy 2821 TTGCAATTTTTTCTACTGAGTGTTTGCACTATACTTTC-----  
TGGAATCTTATTTAACA 2875  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 3499  
TTTCATCTTGCTTAATAAATATCTGCTGGATTCTTTCAAAAAAAAAAAAAAAAAAAAAA 3558

Qy 2876 AAATAAAGGGAAAAAATTGCTTGA-CT 2901  
| | | | | | | | | | | | | | | | | | | | | |  
Db 3559 AAAAAAAGGCCACATGTGCTCGAGCT 3585

#### RESULT 4

US-10-478-914-21/c  
; Sequence 21, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 21



; LENGTH: 3589  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-21

Query Match 35.9%; Score 6178.5; DB 1; Length 3589;  
Best Local Similarity 43.3%; Pred. No. 0;  
Matches 1590; Conservative 0; Mismatches 1170; Indels 909;  
Gaps 209;

Qy 1 TTGA---AATCAGGAA-----ATCAGGCCGGGCG-CAGTG-----  
GCTCATG-- 38

|||| |||| | | || | | | | ||| | || |  
Db 3537  
TTGAAAGAATCCAGCAGATATTTATTAAGCAAGATGAAAGTGAAATTACAAACACAGGTC 3478

Qy 39 --CCTGTAAGCCCAGCACTTTG-----GGAGG----CGG-----  
AGGCGG-- 72

| | ||| | ||||| || |||| ||| |||| |  
Db 3477  
AACTTTTAAACTCAGCACTCTGTTGGAGTGGAGGTGCACGGTCCTTCATCATAGGCAGCC 3418

Qy 73 ---GTG-GATCCAT-  
TGAGGTGAGGAGCTCAAGACCAGCCTGGTCAACATGGTGAAACCC 127

| | ||| ||| | ||| ||||| | | || | | || | || |  
|  
Db 3417 TATGCGAGATGCATCTTAGGAAGGGAGCTTTTCG--CTGCTCAGAAATCA-----  
AAGCTC 3365

Qy 128 CGTC-----TCTACTAAAAATA-  
CAAAAAAAAAAATTAGCTGGGCGTGTGGC----- 173

| || |||| | || | || | || | || | || | || |  
Db 3364 CATCGGAGGTGTCCTACTGGAGGCATCAGACAACAAGCTAAAT-  
GACGTTAGGGCTACAC 3306

Qy 174 -----GGGAGCCTGTAGTCCCAGCTACACGGGAGGCTAAG-GTGG----  
GAGAATT-G 220

| | | | | | | | | | | | | | | | | | | |  
|  
Db 3305 AACACAAAGGGGAAAGTTG--ACAACAATTCAGG-  
GGCTTTGAGTAGTCAAGACAATTAG 3249

Qy 221 CTT-GAAC--CCGG-----GAGGCGGAGGTT-----  
GCAGTGAGCTGAGATTGCACCAT 266

||| | || | || | || | || | ||| | |||| |  
|  
Db 3248 CTTAGTACTTCAGGTCAATAAATGCTACAATTTATGGGCAATTAGCTGTAA-----  
AA 3196

Qy 267 TGCACTCCAGCCTGGGCGACAGAGCAAGAC---TCTCTC-  
AAAAAAAAAAAAAGAAAG 322

| | || ||| || | | | | | | | | | | | | |  
|  
Db 3195 TGGCCTACAG-  
CTGAAACACTATTCTTGTCTTATTTACGATTTTCATGGAGATTAAAGAT 3137

Qy 323 AAAGAAATCAGAAATCGACCACAGTGGTAGCCACCTG--  
GCCTAATGCTGTGTTTTTGT 380

| | || |||| | | || | | | | | | | |||| ||| || |  
||

Db 3136 AATCTAACAGATTA-AGGCCTTAAT-CTTTAATCCAGGTGAGTAATTTTGT-  
TTGTAGT 3080

Qy 381  
ACCTGACAGGGGTCACTCATTTTTAGGCACAACCTCCTTCATTCTTTGTGAAATTAGTGAGT 440  
| | | | | | | | | | | | | | | | | | | | | |

Db 3079 AAAAAGCATAAG-AAATAATT-----  
CTCAGCATATTATGTAAAAGAAAAAGCAGTGAAA 3026

Qy 441 TTCCT-----TCTACCCGTCAC-----  
CAGATTCAA-----T 467  
| | | | | | | | | | | | | | | | | | | | | |

Db 3025  
ACCTTGTTTGGTCTTCCAGTGGCAAGGATAGTTGAACAACCTTCAAGAAGCTGAGAGAAGT 2966

Qy 468 ATGTT-----  
TATTAATACACCGATAACCCACAGGGGAAGGGCACTTGTCG 513  
| | | | | | | | | | | | | | | | | | | | | |

Db 2965 TTGTTCCCAATTTACAAGTATTTTGACATATAGATAAACA-  
AAAGCAAACCAGTTAAAC 2907

Qy 514 CTCTCC----CACCTGGTTA----CC--ACAGT-----  
CTCCATGGGTCTTT-- 550  
| | | | | | | | | | | | | | | | | | | | | |

Db 2906  
CTTAAAGATCATCTGAATAAGATCCTGACAATTATAATTTTACATCCATGTGAATTTCA 2847

Qy 551 TGCCGT-----GACCA-CA-----  
AATAAAGGAAACACTCATCACTAGTATC- 591  
| | | | | | | | | | | | | | | | | | | | | |

Db 2846  
AGCAATTGTTAATGGGGACCAGCAGGGCTGCATTAAGAAAACCACTTTTCACTGATCTCT 2787

Qy 592 -----TAAGTCGGGC----  
TTTACAGTAACTATGCACCTTCTGTGTGC 630  
| | | | | | | | | | | | | | | | | | | | | |

Db 2786  
CCCCACATATTTTAAATTTGTCTTGCTTTGTTTATTTTGGTTATGCAAGTCCTTTCT-C 2728

Qy 631 TTCACCTCACT-----CTCTACTTCAAACA-----  
GCCCATGG 663  
| | | | | | | | | | | | | | | | | | | | | |

Db 2727  
TTCATGAAACAAGTGTAAGGCTCTAAGGCTAAAATAATAGTTATTTTTGTGGGCCCC--- 2671

Qy 664 AGGGAGGTATTATT-  
ATACTCCTTATGTTGACAGTGAAGAATCTGAGGCCAGAGAGGTT 722  
| | | | | | | | | | | | | | | | | | | | | |

Db 2670  
AAATAGCTACTTTTGAATTTCTTTCTTTAGTATATCTCAAATCTGGGGAACATGGAACCTT 2611

Qy 723 GGGGAC-----TTGAGTAAAGTCA-----  
CACAGCCC-- 749  
| | | | | | | | | | | | | | | | | | | | | |

Db 2610  
GAAGACTCCTAACCATGAAGCATTTGGAAAAATACATATCATTCACTTTTACAGAACCA 2551

Qy 750 -----TGAGAGGCAGGACCAGGGTTC-  
CATTCTGCTC----- 781  
| | | | | | | | | | | | | | | |

Db 2550  
TTTTCTTAAAAATAAGAGGCAATATCCAGATTACATGCATGTTTCATAATAAGCTTTGT 2491

Qy 782 ---TATCCAGTTCCAAGCC--CTTGTGTTTTTC--  
CATTATGTTTAGTGCCTCTTTGC--- 831  
| | | | | | | | | | | | | | | |

Db 2490 TTTAAACAAATCCACACCAGCAT-TATTTTCAGCTTAATATTTTG-  
GCCCCAACCCAAG 2433

Qy 832 -----TAACAGCAA-----CATCTGCAAGATTTGTGTTGG-----  
TTTTG 866  
| | | | | | | | | | | | | | | |

Db 2432  
AATTCAGGTATAACATTTAATTTTCATCTGTAATGCATATATTGGAAGGACAAAATATAT 2373

Qy 867 ATG--GAGAACTCTAGCTCA-----TCCACATGCTAGTGCCCAAG-----  
TGGTG 909  
| | | | | | | | | | | | | | | |

Db 2372  
ATGCAAATAACACTGGAAAATGTTGTTTCCTATACAAGTGATCAAGAAAAAACAAGAA 2313

Qy 910 GAGGGGCCACCTCAGCAGGTGGGT-CTG-AATGCAGCCAAGG----CTGT-  
CCCCGCAA 962  
| | | | | | | | | | | | | | | |

Db 2312  
AAAGAAAACCCATAGCACTAAGTTTGCTGTAGTGAAAATATGGTTAACGGTGCCGTGCAA 2253

Qy 963 -----TGGGTGAGAC-TCGCTCCA--ACTGCCCCG-----  
CCTCAGAGCAGGTGCCT 1006  
| | | | | | | | | | | | | | | |

Db 2252 AATTAGATTTGTTGAAAAGTAGTTCTATTACAGGGAGCAAAGCAAAGAAGCAAGT--  
TT 2195

Qy 1007 AAGTCCTCCCTGGCACTGGCAGGCCTTACCTCA---CATTGC---  
TAAATTAAAGCA--A 1058  
| | | | | | | | | | | | | | | |

Db 2194  
GTGGGCAACTCGGAAGAGGGGATCATATTCTCATTTCCTTAATTGTAATTTAAATAATCA 2135

Qy 1059 TGC-----  
AATTCCTCTTGGGTAAGAGGAATTCCTCCTTCTTTACTAACTGATCCCCAGC 1113  
| | | | | | | | | | | | | | | |

Db 2134 TTCTCCATAATTTCTCTT--TCTAGAG-----CTTTCTTCTTTGTATGCT-ATCAC--  
GT 2085

Qy 1114 AAGGAAATAAAATGTTAGGCTTTAAAAATCCCTACTTTGTC--  
ATATCAGACTA----- 1165  
| | | | | | | | | | | | | | | |

Db 2084 AAGGTAGTACTAT-TTCACCTTAAAAAATGGAAA----  
GACAAATTTTCAGCCTAAGAATG 2030

Qy 1166 ---TATTC-----

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TAAAACTATTTTGAGCGAAACCTGTCA-----1198
      |||||                               ||||| ||   |||   |||   |||
Db      2029
ATGTATTCTGAGTTGGCAATTACTTAAAACAATGAGAGAGTAAAACACATCAAACCTTAAA 1970

Qy      1199 ----TTGCGTCT-----AATTTCAAAT--ATACAG-
AATCTCCTTAAGAGC 1237
      || | | |                               ||| ||| |  ||||| || |  |||
|
Db      1969
GTGTTTACTTTTTGAACATTAAATAAATGTCAGGTAAATACAGAAAAATATATAATCAC 1910

Qy      1238 T-GTTGCCTTATTTTTTTGTAAAGCC-----
TCTCTGACATCAAATGGGGAGAAATGG 1289
      | ||| || |  |||| | || ||           ||||| | ||
|
Db      1909 TAGTT--CTCAGCATTTTATCAATCCCTTTGTTTCTCT-TCTTC-----
TAG 1866

Qy      1290 TGGCACCTCCAGACACCCTGAAACTACACACCA---
TTTCTTCCCTGCTCAGCTTCTGCT 1346
      |   ||   ||   ||   || |   | |   | | | | | ||| | |
|
Db      1865 AAGATTCTATGAGCATTATGTTGCTCCGATCAAAAGTAACCTCACTACTCAAATACC-
AT 1807

Qy      1347 CAGGAGTTCTGTGAGC--TATGGGAAGGCCATTGGTTGTATTTGCT-
ACTTTTACTTTCA 1403
      ||   |||  || ||  ||| |  |  || | |   ||| |  |  |
|||||
Db      1806 CATAGCTTCAATGTGCATTATAGTGATTTCACTAG----
ATTCACTCAAAATCTTTTCA 1751

Qy      1404 TCTTCCT-CTGCTGTAGAGCCATTTAATGTTATTGTCATATGCTGC---
TGGTGAGGTAA 1459
      || | |  | |  ||||| | | |  | | ||| |   ||| ||| |
Db      1750 GTGTCATACATTTATTAAGCCATAAAGTTATGAAACCCTCAGCT-
CTTGTTGGAGAGATCT 1692

Qy      1460 AGGTGGG-----TCCGGGTGC-----CTTCCCA-----
GGG 1485
      || |           | | |           | ||| ||
|
Db      1691
GGGCAGAATTTATACAAGAAGAAGTTTAATTTATCACTTAAAAATCATCTCATAATTGTG 1632

Qy      1486 GTTAGAGGATGTTCAAAGGGCC-----
GATTTCAAGCAGGAGTTCAAGGGCTTATG 1536
      || | ||  | || ||  ||           || | |  | ||  | | |||
|
Db      1631
GTAACAGATTTTTTAAAGTAACCCCTTTGGAAAAAATTTTACGTGATACCCAAAGGCACTAG 1572

Qy      1537 AT---GGATGGTGAGAGATTTGACAACC--ACCAGAGCACATGTGCTC-
TGACCTCTCC 1590
      |   | || | | |  | | || |  | || |||  ||||  | |  |
|
Db      1571
TTCACATAAGGGGTGTGGCTGAAAAAGCAAAACAAAGCCATTGTGTAAGTAAGAGGCACA 1512

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Qy 1591 TGGGCATTGGTTCCTGCT--GGTACCGG----GCGGTTTCAGACCTTC--  
AAATAGGTTGC 1642  
| | | | | | | | | | | | | |

Db 1511  
CAAAAAAAGGATATTTAAAGGAAACCTGTTAAGCTTTAAAGTTATTCTAAAAATGGCACT 1452

Qy 1643 TTTCA-----AAAGAGCTTTCAG--  
GCACTTATTGAGAATTAATGTTTAA 1685  
| | | | | | | | | | | | | |

Db 1451 TTTACGTTGGTATAAAATGAAAGTGCTTTAAGATGAAATTTTTATGTATTTTT--  
TTAAA 1393

Qy 1686 ACAGACATAATAGCCTAGATGAACTCCCAAGAGATC---  
TATTAAATCTTGTGGGCTGAA 1742  
| | | | | | | | | | | | | |

Db 1392 GCTGATTT-----  
TTAACCCCTGAAAATAGGGGGTTATAACAAGAACACTGAT 1344

Qy 1743 TAAATAT--CTCGT-  
GCAGGACTGTGCAACAGTAGCCCAGAGCATCCTGCCTGTGGGCAT 1799  
| | | | | | | | | | | | | |

Db 1343 AGACTCTAACTCATAGCGGCAATAAGTAGTGGATGTCACTAAAATGCT--  
CTGTGTGTGT 1286

Qy 1800 C--CACCTCCCAG-GTGAGGGCAGTGGAAG-CTGGC-----CCG-----  
ACGGCAG 1842  
| | | | | | | | | | | | | |

Db 1285  
CTTTATTTTTTAGTATTTTTAATGTTGATAGACTTGCTTTATCTATCTGTGTATCATTAG 1226

Qy 1843 CCAGAACTTGTTTCTCACCTC-CCACCAGCAACCCCCACCCAAC-----  
CTGGGCC 1894  
| | | | | | | | | | | | | |

Db 1225 TGAGAT-  
TTGCTTTTCAATTCTTTACTAGAAAGTTACAGCTCATTTAAAATAGCTGG--- 1170

Qy 1895 CCAGGCACACGAAGCACAAGTCT-CAG-  
GGGACCATTCCACATTGGGGGATCCTGAGGG 1952  
| | | | | | | | | | | | | |

Db 1169 -TAAATACAGAAAGCATAAATATACAGTAAGTTTAAACACTGATTG-----  
TACTAAATG 1116

Qy 1953 AGCC---CATCACCGCCTCTTGCATACAACTG--TCCACTAGGAGGC---  
ACGCCCAGT 2003  
| | | | | | | | | | | | | |

Db 1115  
CAACAATACAAAGAAGCAAATGGAACACAAATGGTAACACAATAAAACTGTATTACATTT 1056

Qy 2004 GTGGGAGAGATGT--  
ATGGTCTTGCCCTTCCACCTGTAAAACTGCACATATGCAAGCCAT 2061  
| | | | | | | | | | | | | |

Db 1055 GTGCTTCAAATATTACAATACATTATATACAATAGTCCAAAATAAACATCT-  
CATGCCAA 997

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Qy          2062 TTGACTCTGGAAC-----TGCATGCCGTGAAAACT--
CCTAATGGTGTGGAACCTAGTT- 2114
      || || |   |||      ||| ||   ||| |   ||   || ||   ||||
||
Db          996 GTG-ACACAAAAACGAATAGCAAGCAAAAAAATCCAGCCATAT-
GTACATTACTTTTTTTC 939

Qy          2115 TGAATTTGAAATCACGCCGC-ATGCACAAAGG-----GACAGGCCCAGGC---
CCG 2161
      |   |   || || |   |   || ||   ||           |||   |   |||

|||
Db          938
TTTAATAATAAACATTCAACTCTGAACTGGGGCAATTTCACTACATACAGATGCAGTCCG 879

Qy          2162 ACCT-----CAGGT---CATCC-GCC-----
CGCTGGCTGCAGAGCATCCCT 2199
      |   |   || |   ||||| |||           ||||   |   |||   |

|||
Db          878 CCTTTTATTCCATATAACCATCCTGCCTTCCTATATCTACGCT--
ATTGAGTAGGTTTCCT 821

Qy          2200 GGGAGCCAAGGCGAG---GCCCGTGGAGC--
CTGAGCTTTGTGTAGCTCGAGCTTTGT-- 2252
      |   ||| |   |   ||||| |||           || |   |   |   ||| |||

Db          820 --
GTGTCAATTCTTATGTACATGTGGAGCAAAAAAGATAAAAGAATGTAGTGCTCTGTAT 763

Qy          2253 -----GTAGCTC-
GTGCACTTATTATGCACCACCTCCCTTCAGTCA 2292
                        ||| || | | || |   ||||   |||| | |||| |

|
Db          762
TCTTAATGGGGTGATGTTGATAGATCAGCGAACCTGGGGTGCATAACCTTCTTTTCATTAA 703

Qy          2293 CCACTCCTCTTCCTCCGCCATCC-----TCAT-TTATACTGATTGCACAC-----
CCCC 2340
      |   |||| |   |||| |   |   |||| |||| ||   |   |   |

||
Db          702
ACCTTCCTCGTAGTCCGTCTGGCAAAGGATCATGTTATTCTTTAGGAAAAATTTGTCTCC 643

Qy          2341 CGCTCAAACAACAATGTCCTTATTATGATGACCATC-----TCGTAGTGGT--
ACAT- 2390
      |   |||| |   ||   ||| |   |||| |   ||   ||||

||||
Db          642 AACACAAA-ATCTCTG--
ATTACAAAGCTGACATGCAAAGCAGTCCAGGTGGTAAACATT 586

Qy          2391 -TCCAT-----TCCTATTTAAGGTAAGCCCAAAGCCCACCTTTTGG-----
ATTT 2433
      ||| |           ||   || |   ||   |||   |||   ||           |

||
Db          585
GTCCTTGGCACGCATCACCATCTCAAAGGCAGGGATGAGCTTACTACAGGCAGCGCAGTT 526

Qy          2434 TCTCGACTGTCCGAGAA-----
AAGTTGTGTAAGCGCTGCGTTCTTCTGGGTTTGGC-- 2486
      || ||   || |   |   || |   ||| |   |   |   |   || | |||

Db          525 TCCCGTTACACCAAAGAGCCTCAGATAGTCTCTGCGACAAAG-----

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GATAAGATTAGCTT 470

Qy 2487 TAG---ATAGGGTTGTGTCCCTCTATGGAATG-GAGAGTGA-TGTGGGCA-----  
AGGG 2535

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Db 469  
TAGTGTACAGGGTGGAGCCACCTCCCCCAAGCGACAGTCACAGCAGGCACACTTCAGGC 410

Qy 2536  
TGTCATTTTCTCGCACAATACTCACTGAGGATGCTTCTGTAGAAGTGAGAAACACGA 2595

||| ||| || || || || || | | ||| || |||| ||| ||  
||

Db 409 AGTC---TTCATGC-CAGTATTTGTC-CAG----TGC--CTTTAGA----AGATAC-  
CGG 366

Qy 2596 T--GAGTACATTCAGAATTACA---ATAACTCACTCTC-ACTGGGTAAC-TCT--  
CATG 2646

| | | ||| | || || | || | || || || || | | ||  
||

Db 365 TCCTTGATCTTTCGG--  
TTGCAGCCAGCACAACTTTTCGGCTTGGTGTCTGGCTGGACTG 308

Qy 2647 ATAG-ATTTGTATGATCAATACGGGTCT-  
ATTTTTATGTCAACTGAACACTGTAGGGTAC 2704

| || ||||| || || || || || || || || | ||| | ||  
Db 307 AGAGCATTTGTAT-ACCAAACTTTTCTCCTTTTTCTG-  
CATGAGTTGACTTAGGCGTGT 250

Qy 2705 C----TTCCAGTCTTTTTCAAGATTGTTAAATTGAGACA-----  
AGTAATTGAATAATTT 2755

| || ||| | ||| |||| | | || || || || ||  
|

Db 249 CTGAGTTGCAG-CAGCTTCGC-  
ATTGAGCACCAAACCCAAAGGTAGAAGTAGAAGGGGGT 192

Qy 2756 GTCCTATTTTTATTTTAA-----  
AAAAAGTGAATGGACTGAAATGTTAAATGTGAATGT 2809

|||| ||| |||| | ||| | || | | |||  
Db 191 CTCCTTGATTTTCGCTTAAGTGTGGACCTGGTGCGCAGCCTACACCG----  
CCGAGGACCG 136

Qy 2810 ACATTTCTTAATTGCAATTTTTCTA-----  
CTGAGTGTGTTGCA----- 2847

|| || | || || | || | | |||| |||  
Db 135 ACTATTGTGAA--

GCCACTTTGGGAGCGGGTCGGAGTGGCGGCAGGGGGTGGGGGAAGGG 78

Qy 2848 -----CTATACTT-TCTGGAATCTTATT---  
TAACAAAAATAAAGGGAAAAA--A 2891

| | || | || | | | | | ||||  
|

Db 77  
ATGAGGACGGCCAGACAAGACAGGGCGCACACACGGAGCCCCTCGCAGTGTGCAAAATGA 18

Qy 2892 TTGCTTGAC 2900  
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Db 17 TGGCGAATC 9

RESULT 5

US-10-478-914-61

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; Sequence 61, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 61
; LENGTH: 2437
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-61
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Query Match          32.7%; Score 5635; DB 1; Length 2437;
Best Local Similarity 44.1%; Pred. No. 0;
Matches 1360; Conservative 0; Mismatches 887; Indels 838;
Gaps 183;
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Qy          2 TGAAATCAGGAAATCAGGCCGGGCGCAGTGGCTCATGC-CTGTAAGCCCA-----
GCAC 54
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||
Db          2 TTACTTCTGCTCTAAAAGCT--
CGGGAATTCTCTCGAGCACTGTTGGCCTACTGGGTGTAC 59
```

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Qy          55 TTTGGG---AGGCGGAGGCGGGTGGATCC--ATT----GAGGTCAGGAGCTC---
AAGAC 102
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          | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| | | |
Db          60
TGTGGAGACTGTCAAAGTCTCCCGGAGCCCAATTTCCGGAAGCGGTGAGTTCTGAAAGAA 119
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```
Qy          103
CAGCCTGGTCAACATGGTGAAACCCCGTCTCTACTAAAAATACAAAAAAAAAATTAGCT- 161
```

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          | | | |  | |  | |  | |  | |  | |  | |  | |  | |  |
||
Db          120 GTTCCTG--CACCGTAGT---TTCCCAAGTCTGC---
GAATCCCCAACCATGAGCGCCTC 171
```

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Qy          162 GGGCGTGTGGCGGGAGCCTGTAGTCCCAGCTACACGGGAGGCTAAGGTGGGAG-
AATTG 220
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          | | | | |  | |  | |  | |  | |  | |  | |  | |  | |  |
||
Db          172 GGGCGTACTG-----TCCTTTA--CCCA-----
GCAAGGATGGGAGCAGGTG 211
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Qy          221
CTTGAACCCGGGAGGCGGAGGTTGCAGTGAGCTGAGATTGCACCATTCGACTCCAGCCTG 280
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          | |  |          | |  | |  |          | | |  | |  | |  | |  | |
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||||  
 Db 212 CTGGCCAAAGTGAAACGG-----GCTGTGGTT-TACC--TGGACGCC-  
 GCCT- 254

Qy 281 GGCGAC-  
 AGAGCAAGACTCTCTCAAAAAAAAAAAAAAGAAAGAAAGAAATCAGAAAATC 339  
 ||| | |||| | | || | |

|||  
 Db 255 -GCGCCGAGAGCCTG---CACT-----  
 GGGGCTGCGGATC 285

Qy 340  
 GACCACAGTGGTAGCCACCTGGCCTAATGCTGTGTTTTGTACCTGACAGGGGTCCTCA 399  
 ||| | | |||| | || ||| |||| | ||

|  
 Db 286 CACC-----CGTCTCCTGG---AGGCGGTG-----  
 GGGGGCCCTGA 318

Qy 400 TTTTAGGCACAACCTCCTTCATTCTTTGTGAAATTAGTGAGTTTCCTTCTA-  
 CCCGTCACC 458  
 | | | ||| | | ||| ||| | |||| |

Db 319 CTGT-----CACCTGC-----GAGAG-----  
 TTCGAGCCCACG-- 347

Qy 459  
 AGATTCAATATGTTCTATTAATACACCGATAACCACAGGGGAAGGGCACTTGTGCTCTC 518  
 |||| || | || | | | | | | | | | |

||  
 Db 348 -----CAATTGGTGGTG-----GAGCCAAGCAGCCCA-  
 AGGCAGTGTGTTGTGCTGAGCTG 396

Qy 519  
 CCACCTGGTTACCACAGTCTCCATGGGTCTTTTGCCGTGACCACAAATAAAGGAAACACT 578  
 || ||| | | | || || | | || || | |

||||  
 Db 397 CCTGCTGAAAGGC-CGG--ACCGTGAGATCCT-  
 ACGGGACATCATCTGCCGAGTCACT 452

Qy 579 CATCACTAGTATC-  
 TAAGTCGGGCTTTACAGTAACTATGCACCTTCTGTGTGCTTCACCT 637  
 | |||| | | || | || || | || | ||

|||||  
 Db 453 ----TCCAGTATTGTGTGGTGGTCACAACCGTGA----GCCAC-GCTG-----  
 TCCACCT 498

Qy 638 CACT-CTCTACTT---CAAACAGC-----CC---  
 ATGGAGGGAGGTATTATTATACT 682  
 ||| || | | | || || |||||

|  
 Db 499 CACAGCTAATCATGTCCCAGCGGCGGCAGCGCCGAGATGGAGGGG-----  
 CAGCA 549

Qy 683 CCTTATGTT-----GACAGTGAAGAATCTGAGGCCAGAGAGGTTGGG-  
 GACTTGAGTA 735  
 | |||| | | |||| || | || || || || ||

Db 550 GCCGGTGTTTCGAGCAGCTGGAGGAGAAGCTGTG----  
 TGAATGGATGGGCAACATGAACT 605

Qy 736  
 AAGTCACACAGCCCTGAGAGGCAGGACCAGGGTTCCATTCTGCTCTATCCAGTTCCAAG 795

Db 606 -----ACACGGCC----GAGG-TGTTCCA-  
 TGTCCCGTTATTGCTTGCCCTGTTGCTCC 654

Qy 796 CCCTTGTGTTTTCCATTATG-  
 TTTAGTGCCTCTTTGCTAACAGCAACATCTGCAAGATTT 854

Db 655  
 CCACTTTGCCTTGACTCCAGCTTTTGCATCCCTTTTCCCACTGCTACCCAG----- 706

Qy 855  
 GTGTTGGTTTTGATGGAGAACTCTAGCTCATCCACATGCTAGTGCCCAAGTGGTGGAGGG 914

Db 707 -----GATG-----TGCACCTC--  
 CTTAATAGCGCC-----G 732

Qy 915  
 GCCACCTCAGCAGGTGGGTTCTGAATGCAGCCAAGGCTGTCCCGCAATGGGTGAGACTC 974

Db 733 ACCG---GACAAGAGGAAGCTGG--GAAGCC-----  
 TGGGTGATGTGG 770

Qy 975 GCTCCAATGTC-CCGCCCTCAGAGCAGGTGCCTAAGTCC---  
 TCCCTGGCACTGGCAGGC 1030

Db 771 ACTCC-ACTACGCTAACCCAGAGCTGCTGCTGCAGATCAGATGCCTAG---  
 TGTCAGGC 826

Qy 1031 CTTACCTCACATTGCTAAATTAAAGCAATGC-----AATTCCT-----  
 CTTG 1072

Db 827  
 CTCAGTTCTCTGTGTGAACATTTAGGAGTACGGGAGGAGTGTTTTGCTGTAGGTTCTTA 886

Qy 1073 GGTAAGAGGAATTCCTC-CTTCTTTACTAACTGAT----CCCCAGCA-----  
 AGGAAAT 1121

Db 887 AGTCAGG-----  
 TCATCGCTGCGGATCTGGCCAATTATGCCCCTGCAAAGAACAGGAAGA 941

Qy 1122 AAAATGTT--  
 AGGCTTTAAAAATCCCTACTTTGTCATATCAGACTATATTCTAAACTAT 1179

Db 942 AGACTGCTGCAGGC-----  
 AGGGCATCAGTGGTTTTTTGTGGACAGAACCCTGGATCTC- 994

Qy 1180 ATTTGAGC-  
 GAAACCTGTCATTGCGTCTAATTTCAAATATACAGAATCTCCTTAAGAGCT 1238

Db 995 ACAGGAGCAGTTGGACATCATGGAGACAACCTT-----AGTAGAGAAGATCATTTTC-  
 AGCA 1048

Qy 1239  
 GTTGCCTTATTTTTTTGTAAAGCCTCTCTGACATCAAATGGGGAGAAATGGTGGCACCTC 1298



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Db          1500 TGTTAAATC-----AGCTG-----CT-GCCCATGATTGAAGC--
CTGTAACCCAGAG 1542

Qy          1782 CATCCTGCCTGTGGGCATCCACCTCCCAGGTGAGGGCAGTGCGA-
AGCTGGCCCCGACGGC 1840
      | || | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1543 -AACCAAC--GAGGACTACAGCC-----
CTGAGGAACTGCTGATCCTTC--- 1583

Qy          1841 AGCCAGAAGTGTGTTTCTCACCTCCCACCAGCAACCCCCC-----
ACCCAAGTCTGGGCCC 1895
      || | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1584 --TCATA---
TATATTTATTCTGTCACTGGAGAGCTCACGGTAGACAAAGACCTGTG--- 1635

Qy          1896
CAGGCACACGAAGCACAAGTCTCAGGGGACCATTCCACATTGGGGGATCCTGAGGGAGC 1955
      |   || |||| | ||| ||| | | |||| | ||   || | ||| | |
Db          1636 -TGAAGCA-GAAGAAAAAG--TCAAGAAAGCATTGGCTCA----
GGTCTTCTGTGAGGAA 1687

Qy          1956 CC---ATCACCGCCTCT--
TGCATACAAGTGTCCACTAGGAGGCACGCCAGTGTGGGAG 2010
      |   || | ||| | ||| | ||| | || | ||| ||| | | | | |
Db          1688 TCTGGATTGTACCTTTGCTGCAAAAATTACGGACTGGGA--
CTCTTCAA----- 1736

Qy          2011 AGATGTATGGTCTTGCCTTCCACCTGT-AAAAAGTGCACATATGCAAGCCATTG---
CA 2066
      |   ||| | || ||| | | |||| ||| | | | | | | | | | |
||
Db          1737 -----TTAATCTGACATTTACAAATCCAAAATTGC-
CGTGGATGAAGTCTTTACTTCA 1789

Qy          2067 C-TCTGGA-ACTGCATGC-
CGTGAAAGTCCTAATGGTGTGGAAGTCTAGTTTGAATTTGA 2123
      | || |||| | ||| | | | | | |||| | || ||| |||| | |
||
Db          1790 CTTCGGGATATTGCTGGAGCTCGGAGTCTCC-----TGAAAC--
AGTTTAAGTCTGT 1839

Qy          2124 AATCACGCCGCATGCACAAAGGGA-
CAGGCCAGGCCCGACCTCAGGTATCCGCCCGCT 2182
      |           ||| | | | | |||| || | | | | | | | | ||
|
Db          1840 AT-----ATGTTCTTGAAATCATACCCA--CCAGGCATC---TTATAAGCC--
AT 1883

Qy          2183
GGCTGCAGAGCATCCCTGGGAGCCAAGGCGAGGCCCGTGGAGCCTGAGCTTTGTGTAGCT 2242
      | ||| || | ||| | | | | |||| | ||| ||
Db          1884 TGTGAAGCAAGT-
TGTGGAGGAAATATTTATCCCGAGAGGCCAGA----- 1929

Qy          2243
CGAGCTTTGTGTAGCTCGTGCACTTATTATGCACCACCTCCCTTCAGTCACCACTCCTCT 2302
      | | || ||| | ||| | |||| | ||||
|||
Db          1930 -----

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TTCCGTTGATATTGAACACATGTCTTCAGGCCTCACTGATCT 1971

Qy 2303 TCCT----

CCGCCATCCTCATTATCTGATTGCACACCCCCCGCTCAAACAACAATGTC 2358

| | | | | | | | | | | | | | |

Db 1972 CCTTAAAACTGGATTTAGCATGT-TCATGAAGGTGAGCCGGC--CTCA-----  
TC 2018

Qy 2359

CTTATTATGATGACCATCTCGTAGTGGTACATTCCATTCTATTTAAGGTAAGCCCAAAG 2418

| | | | | | | | | | | | | | |

Db 2019 C---TAGTGACTACCCCTC-----

CTGATCCTCTTTGTGGTAGG----- 2055

Qy 2419 CCCACTTTTGGATTTTCTCGACTGTCCGAGAAAAGTTGTGTAAGC-

GCCTGCGTTCTTCT 2477

| | | | | | | | | | | | | | |

Db 2056 -----TGGGG----TC-ACAGTCTCTGAA-----

GTGAAAATGGTCAAAGATCTTGT 2097

Qy 2478

GGGTTTGGCTAGATAGGGTTGTGTCCCTCTATGGAATGGAGAGTGATGTGGGCAAGGGTG 2537

| | | | | | | | | | | | | | |

Db 2098 GGCAT---C-----GTTGAAGCC-----AGGAAC-----

CCAGGTAA 2126

Qy 2538 TCATTTTCTCGCACAATACAAC-----

CACTGAGGATGCTTCTGTAGAAGTGAGAAACA 2592

| | | | | | | | | | | | | | |

|||

Db 2127 TCGTGCTGTC-

CACACGACTCCTGAAGCCACTTAACATTCTGAGCTGTTATTTGCAACT 2185

Qy 2593 CGATGAGTACATTGAGAATTACAAT----AACTCACTCTCACTGGGTAA---

CTTCTCAT 2645

| | | | | | | | | | | | | | |

||||

Db 2186

GACCGACTGCATCCAGACCTTGGCTTCTGAGCATCCGCTAAGAAGATAAGACCTACTCAA 2245

Qy 2646

GATAGATTTGTATGATCAATACGGGTCTATTTTTATGTCAACTGAACACTGTAGGGTAC- 2704

| | | | | | | | | | | | | | |

|

Db 2246 GCTGGAAATG-----CCGATGC-----AATTTTCTGCCACC---

ACTCCAAATACTCCT 2291

Qy 2705 ---CTTCCA--

GTCTTTTTTCAAGATTGTTAAATTGAGACAAGTAATTGAATAATTTGTCC 2759

| | | | | | | | | | | | | | |

||

Db 2292 CCACAACCAGCGTCCCTGTCAC-----TAATTGCGAGAA-TGATGGAAT--TCTG-

CC 2340

Qy 2760 TATTTTTATTTTAAAAAAGTGAATGGAC-

TGAAATGTTAAATGTGAATGTACATTTCTT 2818

| | | | | | | | | | | | | | |

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Db 2341 -----TGAAGGGTCTTGATACCTACTCAGTGAG-  
GTACTTTGCTT 2379

Qy 2819 -  
AATTGCAATTTTCTACTGAGTGTGTTGCACTATACTTTCTGGAATCTTATTTAACAAAA 2877  
|||| | |||  
||||

Db 2380 GGATTGCTGTGATTCT-----  
TAAAAAAAAAAAAA 2408

Qy 2878 ATAAAGGGAAAAAATTGCTTGA-CT 2901  
| ||| || | | |||| || ||  
Db 2409 AAAAAAGGCCACATGTGCTCGAGCT 2433

# RESULT 6

US-10-478-914-61/c  
; Sequence 61, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 61  
; LENGTH: 2437  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-61

Query Match 32.5%; Score 5600.5; DB 1; Length 2437;  
Best Local Similarity 45.5%; Pred. No. 0;  
Matches 1348; Conservative 0; Mismatches 862; Indels 753;  
Gaps 191;

Qy 8 CAGGAAATCAGGCCGGGCGCA-GTGGC-----TCATGCCTGTAAG---  
CCCAGCAC 54  
| | ||| || || || |||| | | | |||| |

||||  
Db 2437 CTG-----  
CAGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTTAAGAATCACAGCAA 2383

Qy 55 TTTGGGAGGCGGAGGCGGGTGGATC-  
CATTGAGGTCAGGAGCTCAAGACCAGCCTGGTCA 113  
| | || | | | |||| ||| |||||||

|  
Db 2382 TCC---AAGCAAA-----GTACCTCACTGAG--TAGGT-ATCAAGACC-----  
CT 2344

Qy 114  
ACATGGTGAAACCCCGTCTCTACTAAAAATACAAAAAAAATTAGCTGGGCGTGTTGGC 173

Db 2343 TCA-GGCAGAATTCATC-----  
 ATTCTC----- 2321

Qy 174  
 GGGAGCCTGTAGTCCCAGCTACACGGGAGGCTAAGGTGGGAGAATTGCTTGAACCCGGGA 233  
 Db 2320 ----GCAATTAGTGACAGGGACGCTGGTTGT-----  
 GGAGGAGTATTTGGA----- 2279

Qy 234 GGCGGAGGTTGCAGTGAGCTGAGATTGCACCATTGCA-  
 CTCCAGCCTGGG----- 282  
 Db 2278 ----GTGGTGGCAG-----AAAATTGCATCG--  
 GCATTTCCAGCTTGAGTAGGTCTTAT 2231

Qy 283  
 CGACAGAGCAAGACTCTCTCAAAAAAAAAAAAAAAAAAGAAAGAAAGAAATCAGAAAATCGAC 342  
 Db 2230 CTTCTTAGC-GGATGCTC-----  
 AGAAGCCAAGGTCTGGATGCAGTCGGTCAGTTG-- 2181

Qy 343 CACAGTGGTAGCCAC-  
 CTGGCCTAATGCTGTGTTTTGTACCTGACAGGGGTCATCATT 401  
 Db 2180 CAAA----TAACAGCTCAGG---AATG-----TTAAGTGGCT-  
 TCAGGAGTCG-----T 2140

Qy 402 TTAG---GCACAACT-CCTTCATTCTTTGTGAAATTAGTGAGTTTCCTTCTAC-  
 CCGTCA 456  
 Db 2139 GTGGACAGCACGATTACCTGGGTTCTGG-----  
 CTTCAACGATGCCA 2097

Qy 457 CCAGATTCAATATGTTCTATTAATACACCGATAACCCAGGGGAAGGGCACT-  
 TGTCGCT 515  
 Db 2096 CAAGAT---CTTTGACCATT-----TCACTTCAGAG-----  
 ACTGTGAC--- 2060

Qy 516 CTCCACCTGGTTACCACA-----GTCTCCATGGGTCTTTTGCCGTGACCACAA--  
 ATA 567  
 Db 2059 --CCCACC----TACCACAAAGAGGATCAGGAGGGG-----  
 GTAGTCACTAGGATG 2015

Qy 568 AAG--GAAACACTCATCACTAGTAT-CTAAGTCGGGCTTTACAGT-  
 AACTATGCACCTTC 623  
 Db 2014 AGGCCGGCTCAC-  
 CTTTCATGAACATGCTAAATCCAGTTTTAAGGAGATCAGTGAGGC--C 1958

Qy 624  
 TGTGTGCTTCACCTCACTCTCTACTTCAAACAGCCCATGGAGGGAGGTATTATTATACTC 683  
 Db 1958

Db 1957 TGAAGACATGTGTTCAATATCAACGGAATCTGGCCTCT--CGGGATGAAATATT-  
TCCTC 1901

Qy 684 CTTATGTTG-----  
ACAGTGAAGAATCTGAGGCCAGAGAGGTTGGGGACTTGAGTAAAG 738  
| | ||| ||| || | | ||| | | | | |

Db 1900  
CACAACCTTGCTTCAACAATGGCTTATAAGATGCCTGGTGGGTATGATTTCCAGGAACATA 1841

Qy 739 TCACACAGCCCTGAGAGGCAGGACCAGGGTTCCATTCC-  
TGCTCTATCCAGTTCCAAGCC 797  
| |||| | | | | |||| | ||| |||| | | | ||  
||

Db 1840 T---ACAGACTT---AAACTGTTTCAGGAGAC---TCCGAGCTCCAGCAATATC----  
CC 1794

Qy 798 CTTGTGTTTTCCATTATGTTTAGTG--  
CCTCTTTGCTAACAGCAACATCTGCAAGATTTG 855  
||| | | | | | | |||| | ||  
|||||

Db 1793 GAAGTG-----AAGTAAAGAGTTCATC-----CACGGCAA-TTTTG---  
GATTTG 1753

Qy 856 -----  
TGTTGGTTTTGATGGAGAACTCTAGCTCATCCACATGCTAGTGCCCAAGTGGTGG 910  
||| | || |||| | || ||| | | ||| | |||  
|

Db 1752 TGAAATGTCAGATTAATTGAAGAGTCCCAG----  
TCCGTAATTTTTTGCAGCAAAGGT-G 1698

Qy 911 AGGGGCCA----CCTCAGCAGGTGGGTTCTG----  
AATGCAGCCAAGGCTGT----- 954  
| ||| |||| || | ||| |||| | | ||| |

Db 1697 ACAATCCAGATTTCCTCA-CAG--  
AAGACCTGAGCCAATGCTTTCTTGACTTTTTCTTCTG 1641

Qy 955 CCCCAGCAATGG-----GTGAGACTCGCTCCAAGTCCCCGCC-----  
CTCAG 995  
| | || || |||| | |||| ||| | | |

Db 1640 CTTACACAGGTCTTTGTCTACCGTGAG---CTCTCCAG-  
TGACAGAATAAATATATATG 1585

Qy 996 AGCAGGTGCCTAAGTCCTCCCTGGCACTGGCAGGCCTTACCTCACATTG-----  
CTAAAT 1050  
|| ||| | ||| | | ||| | |||| | ||| ||  
|

Db 1584 AGAAGGATCAGCAGTTCCCTCAGGGCT---GTAGTCCT-----  
CGTTGGTTCTCTGGGT 1535

Qy 1051 TAAAGCAATGCAATTCCTCTTGGGTA--AGAGGAATT----  
CCTCCTTCTTTACTAACTG 1104  
|| || || || |||| | || |||| | | | ||| |||

Db 1534 TACAG----GC--  
TTAATCATGGGCAGCAGCTGATTTAACACAACGGACATTGCTGAC-- 1483

Qy 1105 ATCCCCA--GCAAGGAAATAAAATGTTAGGCTTTAAAAATCCC-TACTTTGT----  
CATA 1157  
||||| || ||| | || |||| |||| || | |||| |  
|



Db 1482 -TCCCAATGCTCTGAAGAAGG-----  
AGCCTTTCAAAGCCAGAAAGTTGTCCCACTTG 1429

Qy 1158 TCAGACTATATTCTAAACTATATTTGAGC-  
GAAACCTGTCATTGCGTCTAATTTCAAAT 1216

Db 1428 GCAGTCTGTGGG-TGTTTCAACGTTTGAGCTGTGGCCAGTCCAAGC-----  
TGGAGGA 1377

Qy 1217 ATACAGAAT-CTCCTTAAGAGCTGTTGCCTTATTTTTTTGTAAAGC---  
CTCTCTGACAT 1272

Db 1376 GGCCACAATGATTCATTAGAGCT-TTGAGGT-  
TGTTCTTGAAGAGCTGAATATAGGAC-- 1321

Qy 1273 CAAATGGGGAGAAATGGTGGCAC-  
CTCCAGACACCCTGAAACTACACACCATTTCTTCCC 1331

Db 1320 ---ATGAGCTGTCCCGGTGTGACTCTCC--  
CCATACTCATCTTGATTGGCAGGTTTTCTC 1266

Qy 1332 TGCT--CAGCTTCTGCTCAGGAGTTCTGTGAGCTATGGGAAGGCCAT---  
TGGTTGTATT 1386

Db 1265 TGCTTGCCGCTTC--CACTAGATGTCTCCGAACTT-----  
CCATCACTGCCTCTTTG 1216

Qy 1387 TGCTACTTTTACT-  
TTCATCTTCTCTGCTGTAGAGCCATTTAATGTTATTGTCATATGC 1445

Db 1215 TGCTTAGTGTTCAGTAAAGCTTC-----CCATAGGGC--  
TTTGGCTGTGGTGTCA---C 1167

Qy 1446 TG-  
CTGGTGAGGTAAAGGTGGGTCCGGGTGCCTTCCCAGGGGTTAGAGGATGTTCAAAGG 1504

Db 1166 TGAATTGTGAAAGACAG-----CCTGGTGCAACCACA---TTATA--  
ATTTTCCT--- 1122

Qy 1505 GCCGATTTAGCA-GGAGTTCAGAGGGC-  
TTATGATGGATGGTGAGAGATTTGACAACCA 1562

Db 1121 -CC----TCAGTATGGAGTGCAGTGAGCGCTATCATG-----TT---  
AACCA 1083

Qy 1563  
CCAGAGCACATGTGCTCTGACCCTCTCCTGGGCATTGGTTCCTGCTGGTACCGGGCGGTT 1622

Db 1082 TCACATCATTTGTG---TGG-----CCTGGG-----  
AGCTGGGGAAGTGCTGAA 1042

Qy 1623  
CAGACCTTCAAATAGGTTGCTTTCAAAGAGCTTTAGGCACCTATTGAGAATTAATGTT 1682

Db 1041 ATGATCTTC-----  
TCTACTAAGTTGTCT----- 1018

Qy 1683 TAAACAGACATAATAGCCTAGATGAACTCCCAAGAGATCTATTAAATCTTGTGGGCTGAA 1742  
 ||| || || | || ||| ||||| | ||| |  
 Db 1017 -----CCATGATGTCC-AACTG--CTCCTGTGAGATCCA-----  
 GGGTT--- 982

Qy 1743 TAAATATCTCGTGCAGGACTGTGCAACAGTAGCC-CAGA-  
 GCATCCTGCCTGTGGGCATC 1800  
 ||| | || | || | || || ||||| |||  
 Db 981 -----CTGT-CCACAAAACCACTGATGC--CCTGCCTGC-  
 AGCAGT 944

Qy 1801 CACCTCCCAGGTGAGGGCAGTGGGA-AGCTGGCCCCGA-  
 CGGCAGCCAGAACTTGTTCCTC 1858  
 | || || | ||| || | |||| || | |||| | || || |  
 |  
 Db 943 CTTCTTCCTGTTCTTTGCAGGGGCATAATTGGCCAGATCCGCAGCGATGACCTGACT-  
 TA 885

Qy 1859 ACCTCCCACCAGC--AACCCCCACCC-----AACTCTGGGCCCC-  
 AGGC 1900  
 | || ||| || | || || ||| | | | |  
 ||||  
 Db 884  
 AGGAACCTACAGCAAAACACTCCTCCCGTACTCCTAAATGTTACACAGAGAACTGAGGC 825

Qy 1901 ---ACACGAAGCA-CAAGTCT-CAGGGGACCATTCCCACATTGGGGGATCCTGAG-  
 GGAG 1954  
 |||| | || | ||| || | | |||| | ||  
 ||||  
 Db 824 CTGACACTAGGCATCTGATCTGCAGCAG-----  
 CAGCTCTGGGGTTAGCGTAGTGGAG 772

Qy 1955 --CCCATCACC---GCCT-CTTGATACAACCTGTC-----CACT----AGGAG--  
 GC 1994  
 | ||||| || | | || | ||| | || |||||  
 ||  
 Db 771  
 TCCACATCACCAGGCTTCCCAGCTTCTTGTCCGGTCGGGCGCTATTAAGGAGGTGC 712

Qy 1995 ACGCCCAGTGTGGGAGAGATGTATGGTCTTGCCTTCCAC--  
 CTGTAAAACTGCACATAT 2052  
 || || ||| || || | | | | ||| | ||| |  
 Db 711 ACATCC----  
 TGGGGTAGCAGTGGGAAAAGGGATGCAAAAGCTGGAGTCAAGGCAAAGTG 656

Qy 2053 GCAAGC--CATTTGCACTCTGGAAGTGCATGCCGTGAAAACCTCCT-  
 AATGGTGTGGAAGT 2109  
 | ||| || ||| | ||| | | ||| ||| |||||  
 |  
 Db 655 GGGAGCAACAGGGGCAAGCAATAACGG---GACATG-  
 GAACACCTCGGCCGTGTAGTTCA 600

Qy 2110 TAGTTTGAATTTGAAATCACGCCGC-----ATGCACAAAGGGACAGGCC-  
 CAGG 2157  
 | ||| | |||| | || ||| | || ||| |  
 |  
 Db 599 TG--TTGCCATCCATTACACAGCTTCTCCTCCAGCTGCTCGAA--  
 CACCGGCTGCTGC 544

Qy 2158 CCCGACCTCAGGTCATCCGC-----CCGCTGGCTGCAGAGCATCCCTGGGA----  
GCCAA 2208  
||| | || | ||| | ||||| | | | ||| || |  
||  
Db 543 CCCTCCATC---TCGGCCGCTGCCGCCGCTGG--  
GACATGATTAGCTGTGAGGTGGACA- 490  
Qy 2209 GGCGAGGCCCGTGG----  
AGCCTGAGCTTTGTGTAGCTCGAGCTTTGTGTAGCTCGTG-C 2263  
||| ||| | || | || | | | | | ||| |  
|  
Db 489 -  
GCGTGGCTCACGGTTGTGACCACCACACAATACTGGAAGTGA CTGCGGCAGATGATGTC 431  
Qy 2264 ACTTATTATGCACCA-----CCTCCCTT----  
CAGTCACCACTCCTCTTCCTCCGCCATCC 2315  
| || || | ||| || |||| ||| || | | | | |||  
Db 430 CCGTAGGAT-  
CTCCACGGTCCGGCCTTTACGACAGGCAGCTCAGCACAAACACTGCC----- 376  
Qy 2316 TCATTTATACTGATTGCACACCCCCCGCTCAAACAACAATGTC---  
CTTATTATGATGAC 2372  
|| ||| ||| | || || | | | || || |  
||||  
Db 375 ----TTGGGCTGCTTG-  
GCTCCACCACCAATTGCGTCGGGCTCGAACTCTCGCAGGTGAC 321  
Qy 2373 CATCTCGTAGTGGTACATTCC-ATTCTATTITA-  
AGGTAAGCCCAAAGCCCACTTTTGA 2430  
|| || | | || || | ||| || |||| |  
|  
Db 320 AGTC-----AGGGCCCCCACC GCCTCCAGGAGACGGGTGGATCCGCAGCCCC--  
AGTGCA 267  
Qy 2431 TTTTCTCG--ACTGTCCGAGAAAAGTTGTGTAAGCGCCTG--  
CGTTCTTCTGGGTTTGGC 2486  
||||| | | | | || |||| | | | |||| |  
||||||  
Db 266 GGCTCTCGGCGCAGGCGGCGTCCAG----GTAAACCACAGCCCGTTTCAC----  
TTTGGC 215  
Qy 2487  
TAGATAGGGTTGTGTCCCTCTATGGAATGGAGAGTGATGTGGCAAGGGTGTCATTTTCT 2546  
|| || || || || || |||| || | | |||  
Db 214 CAGCAC---CTGCTCCCATCCTTG-----CTGGGTAAAG--  
GACAGT---A 177  
Qy 2547 CGCACAATACAAC TCACTGAGGATGCTTCTGTAGAAGTGAGAAAC-ACGATG-  
AGTACAT 2604  
||| | | |||| | | | ||| || |||| ||| || |||  
|  
Db 176 CGCCCGAGGC-GCTCATGGTTGGGGATTG-  
GCAGACTTGGGAAACTACGGTGCAGGAACT 119  
Qy 2605 TCAGAATTACAATAACTCACTCTCACTGGGTAACT--  
TCTCATGATAGATTGTATGATC 2662  
|| || || ||||| | | || || | ||| | |||| |  
||  
Db 118 TC-----TTTCAG-AACTCAC-CGCTTCCGGAAATTGGGCTCCGGGAGACTTTGACAG

TC 66

```
Qy          2663
AATACGGGTCTATTTTTATGTCAACTGAACACTGTAGGGTACCTTCCAGTCTTTTCAAG 2722
      || | |      || | |||| | | | | | | || || || ||
Db          65 TCCACAGTACACCCAGTAGGCCAACAGTGCTC-GAGGAATTCCG--CAG-
CTTT----- 16
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Qy          2723 ATTGTTAAATTGAG-ACAAGTAA 2744
                        | ||| | |||||
Db          15 -----TAGAGCAGAAGTAA 2
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RESULT 7

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US-10-478-914-20
; Sequence 20, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 20
; LENGTH: 2495
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-20
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Query Match          31.4%; Score 5410; DB 1; Length 2495;
Best Local Similarity 45.7%; Pred. No. 0;
Matches 1375; Conservative 0; Mismatches 956; Indels 678;
Gaps 181;
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Qy          4 AAATCAGGAAATCAGGC-----CGGGCGCAGTGGCTCATGCCTGTA-
AGCCCAGCACTT 56
      |      ||      | |||      | || | ||||| |      || | ||| | |||
Db          2 ACTGTTGGCCTACTGGCTACTATCAGGATC-GTGGCTATT--
TTGAAGAGCTGATCACCA 58
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Qy          57 TG--
GGAGGCGGAGGCGGGTGGATCCATTGAGGTCAGGAGCTCAAGACCAGCCTGGTCAA 114
      || ||| || | | ||| | |||| | ||||| || | ||
Db          59 TGTTGGAAGCAGC-AC---TGGGAC--TTGAG--C--GAGCTC---ACATG---
GGAATG 102
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Qy          115 CATGGTGAA--
ACCCCGTCTCTACTAAAAATACAAAAAATAATTAGCTGGGCGTGTGG 172
      | |||| | | ||| |||| |||| ||      || |
|
Db          103 TTTACTGAATTAGCTATTCTATACTCTAAATTTAAGC-----
CTCAGAAAAT--G 150
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Qy 173  
CGGGAGCCTGTAGTCCCAGCTACACGGGAGGCTAAGGTGGGAGAATTGCTTGAACCCGGG 232

Db 151 AGGGAGCACCTGG-----AGCTGTTCTGGT--CTAGAGT--GAATATT-----  
CCC--- 192

Qy 233  
AGGCGGAGGTTGCAGTGAGCTGAGATTGCACCATTGCACTCCAGCCTGGGCGACAGAGCA 292

Db 193 -----AAGGTGCTAAGAGCTGC---AGAACA--GCTCATCT--TTGGG---  
CAGAACT 236

Qy 293  
AGACTCTCTCAAAAAAAAAAAAAAGAAAAGAAAGAAATCAGAAAATCGACCACAGTGGT- 351

Db 237 GGTGTTTTTGTATGACAAGTATGAAGAATATGATAATGCCATAATT--  
ACCATGATGAAT 294

Qy 352 -AGCCACCTG--GCCT--AATGCTGTGTTTTTGTGTA-----  
CCTGACAGGGGTCACTCAT 400

Db 295 CATCCAACCTGATGCCTGGAAAAGAAGGGCAATTCAAAGATATCATTACCAAGGTTGC-  
CAA 353

Qy 401 TTAGGCACAACCTCCTTCATTCTTTGTGAAATTAGTGAGTT-TCCTTCTAC--  
CCGTCAC 457

Db 354 TGT-GGAACTA-TACTACA-----GAGCAATAC---  
AGTTCTACTTAGAATTCAAGCCT 402

Qy 458  
CAGATTCAATATGTTCTATTAATACACCGATAACCACAGGGGAAGGGCACTTGTCGCTCT 517

Db 403 CTGTTGTTAAATGATTTGCTGATGGTGCTGTCTCCACGGTTGGATCACACTCGT-  
GCAGT 461

Qy 518  
CCCACCTGGTTACCACAGTCTCCATGGGTCCTTTTGCCGTGACCACAAATAAAGGAAACAC 577

Db 462 C-----AATTATTTTCAG----CAAGG---TTAAACAGCTACCACTGGT----  
GAAAC-- 502

Qy 578 TCATCACTAGTATCTAAGTCGGGCTTTACAGTAACTATGCACC--TTCTGTG--  
TGCTTC 633

Db 503 -----CGTATTTG---  
CGTTCAGTTCAGAACCATAACAACAAATCTGTGAATGAATC 551

Qy 634  
ACCTCACTCTCTACTTCAAACAGCCCATGGAGGGAGGTATTATTATACTCCTTATGTTGA 693

Db 552 ATTGAACAATCTTTTTATTACA-----GAAGAAG--ATTATCAGGCTC----  
TGCGAA 598

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Qy          694 CAGTGA-AGAATCTGAGGCCAGAGAGGTTGGGGACTTTGAGTAAAGTCACAC-
AGCCCTG 751
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Db          599 CATCAATAGATGCTTATGAC-----
AACTTTGACAATATCTCGCTTGCTCAG 645

Qy          752 AG-----AGGCAGGACC----AGGGTTC-----
CATTCTGCTCTATCCAGTTCCAAG 795
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Db          646 CGTTTGGAAAAACATGAACTCATTGAGTTCAGGAGAATTGCTGCT-TATCTC-
TTCAAAAG 703

Qy          796 CC--CTTGTGTTTTCCATTATGTTTAGTGCCTCTTTGCT--
AACAGCAACATCTGCAAGA 851
      | | | | | | | | | | | | | | | | | |
Db          704 GCAACAATCGCTGGAAACAGAGTGTAGAG---
CTGTGCAAGAAAGACAGCCTTTACAA-- 758

Qy          852
TTTGTGTTGGTTTTGATGGAGAACTCTAGCTCATCCACATGCTAGTGCCCAAGTGGTGGA 911
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Db          759 -----GGATGCAATGCAGTATGCTT-CTGAATCTAAAGATACTG---
AATTGGCTGA 806

Qy          912 GGGGCCACCTCAGCAGGTGGGTTCTGAATGCAG--
CCAAGGCTGTCCCCGCAATGGGTGA 969
      | | ||| ||| ||| | | | | | | | | | |
Db          807 -AGAACTCCT--GCA-GTGGTTTTTGCAGGAAGAAAAAAGAGAGT----
GCTTTTG----- 854

Qy          970 GACTCGCTCCAACCTGCCCCG---CCCTCAGAGCAGGTGCCT-
AAGTCCTCCCTGGCACTG- 1024
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Db          855 AGCTTG-TCTGTTTACCTGTTACGATCTTTTAAG--
GCCAGATGTCGTCTCTAGAAACTGC 911

Qy          1025 --GCAGGCCTTACCTCACATTGCTAAATTAAGCAATGC---
AATTCTCTTGGGTAAGA 1079
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Db          912 ATGGAGGCACAATATCA-----TGGATT-
TTGCCATGCCCTATTTTCATCCAGGTCATGA 964

Qy          1080 GGAATTCCT-----
CCTTCTTTACTAACTGATCCCCAGCAAGGAAATAAA 1124
      | | | || | | | | | | | | | | | |
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Db          965 AGGAGTACTTGACAAAGGTGGATAAATTAGATGCT-TCAGAATCACTG--
AGAAAAGAAG 1021

Qy          1125 ATGTT-AGGCTTTTAAAAATCCCTA--CTTTGTCAT--ATCAGAC----
TATATTCTAAAA 1175
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Db          1022 AAGAACAAGCTACAGAGA-
CACAAACCATTGTTTATGGTCAGCCCCAGTTGATGCTGACA 1080

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Qy          1176 -----CTATATTTGAGCGAAACCTGTCATTGCGTC---
TAATTTCAAATATACAGAA 1224
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Db          1081 GCAGGACCCAGTGTT---
GCCGTCCCTCCCCAGGCACCTTTTGGTTATGGTTATACCGCA 1137
|
Qy          1225 TCTCCTTAAGAGCTGTTGCCTTATTTTTTTGTAAAGCCT--CTCTG---
ACATCAAATGG 1279
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|
Db          1138 CCACCGTATGGAC---AGCC-----
ACAGCCTGGCTTTGGGTACAGCATGTGA 1182
|
Qy          1280 GGAGAAATGGTGGCACCTCCAGACACC-----
CTGAAACTACACACCATTTCTTC 1329
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|
Db          1183 GATGAAGCGCT-GATCCTGTAGTCACCTATTTTCGTA CTGAAAC--ATCGTCTTTAC-
CC 1238
|
Qy          1330
CCTGCTCAGCTTCTGCTCAGGAGTTCTGTGAGCTATGGGAAGGCCATTGGTTGTATTTGC 1389
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|
Db          1239 ACTTCTCAGTTTATAATGGGG-----GAAAC-----AGGCAAC---
GTGTTCTTGT 1282
|
Qy          1390 TACTTTTACTTTTCATCTTCCTCTGCTGTAGAGCCATTTAATGTTATTGTC-
ATATGCTGC 1448
|
|
Db          1283 AACCTTTA-TTCA-----
TGAAGGACTTCTTTTGTTCCTAACTATAAACT-- 1328
|
Qy          1449
TGGTGAGGTAAAGGTGGGTCCGGTGCCTTCCCAGGGGTTAGAGGATGTTCAAAGGGCC- 1507
|
|
Db          1329 -----TGGATC----ACCT-----ATGTTAAAA---
CCT 1350
|
Qy          1508 GATTTC-----
GCAGGAGTTCAGAGGGCTTATGATGGATGGTGAGAGATTTGAC---- 1557
|
|
Db          1351 TATTTACATTCCACATCATTTTAGA--
ATTTATTTTTCGAAGGGGAATAGTTTCAATGTT 1408
|
Qy          1558 --
AACCACCAGAGCACATGTGCTCTGACCCTCTCCTGGGCATTGGTTCTGCTGGTACCG 1615
|
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Db          1409 TTATTCATTGGGCTTTTTTTCT---TCCCCCTCT-----TTCTT-----
TAAAG 1450
|
Qy          1616
GGCGGTTTCAGACCTTCAAATAGGTTGCTTTCAAAGAGCTTTTCAGGCACTTATTGAGAAT 1675
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Db          1451 AACTGCTCA-ATATTC-AATCTGTTG-TGAAGAACCTGATTT---GCACT--
CTG----- 1497

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Qy 1676  
TAATGTTTAAACAGACATAATAGCCTAGATGAACTCCCAAGAGATCTATTAAATCTTGTG 1735  
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Db 1498 TAGTGTTTAAAGAAACAAAG-----AAACTCTAA-----  
TATTGAATCT---- 1536

Qy 1736  
GGCTGAATAAATATCTCGTGCAGGACTGTGCAACAGTAGCCCAGAGCATCCTGCCTGTGG 1795  
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Db 1537 --CTTAA-----ATTTAGTGTA----TGT-  
AAACAGCTTACAAATACGTATTGTCTAAAT 1584

Qy 1796  
GCATCCACCTCCCAGGTGAGGGCAGTGGGAAGCTGGCCCCGACGGCAGCCAGAACTTGTTT 1855  
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Db 1585 GCATTTAAAT--CTGTTTTATTCAAAGAAAAGCTAAAGCAAAAAC-----  
ACTGGCAT 1635

Qy 1856 CTCACCTCCAC-----CAGCAACCCCCACCCAACCTCTGGGCCCCAGGCACA-  
CGAAG 1908  
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Db 1636 ATGACCATGCAAGACTGTCAGTGCCAACAAAGACAACACTAATC----  
AGCACATCGTA- 1690

Qy 1909 CACAAGTCT-CAGGGGACCATTCCCACATTGGGGGATCCTGAGGGAGCCCATCACCG-  
CC 1966  
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Db 1691 CACTGGATTGCAGTG----CTTCCCAGATTATTGAAAAATG-----  
TTACAGACA 1736

Qy 1967 TCTTGCATAC-----AACTGTCCACTAGGAGGCACGC---  
CCAGTGTTGGGAGAGATGTAT 2018  
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Db 1737 ACTTGCCTGATTTTTTAAATGAGCG-  
TAAAGGCCCTCTAACCTATGCAGG----- 1785

Qy 2019 GGTCTTGCCTTCCA-----  
CCTGTAAAACTGCACATATGCAAGCCATTTGCACTCTGGA 2073  
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Db 1786 ----TTTCC--CCATTATGCATATAGAAAATGCTAGTATG-----  
TTTTGCTCACTTCA 1833

Qy 2074  
ACTGCATGCCGTGAAAACCTCCTAATGGTGTGGAACCTTAGTTTGAATTTGAAATCACGCCG 2133  
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Db 1834 TATGTAACAGGTGC-----CCTTATGTTGTG---CT--GT-----ATCCTG-  
TG 1871

Qy 2134  
CATGCACAAAGGGACAGGCCAGGCCGACCTCAGGTCATCCGCCCGCTGGCTGCAGAGC 2193  
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Db 1872 CTTTTTCTGTGGGACCATTCCATTAGGAGCAAAG-----AGCAC-  
CATGATTC----C 1920



Qy 2194  
 ATCCCTGGGAGCCAAGGCGAGGCCCGTGGAGCCTGAGCTTTGTGTAGCTCGAGCTTTGTG 2253  
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 Db 1921 AATCTTGTGTGTGTTTACTA-ACCCTT---  
 CCCTGAGGTTTGTGTATGTTGGATATTGTG 1976

Qy 2254 TAG--CTCGTGCACCTTATTATGC--ACCACCTCCCTTCAGTCACC--  
 ACTCCTCTTCCTC 2307  
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 Db 1977  
 GTGTTTTAGATCACTGAGTGTACAGAAGAGAGAAATTCAAACAAAATATTGCTGTTCTTC 2036

Qy 2308  
 CGCCATCCTCATTTTATACTGATTGCACACCCCCGCTCAAACAACAATGTCCTTATTATG 2367  
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 Db 2037 AGTTTT----  
 GTTTGTGGAATTTGAAATTACTCAAATTTAAATAAATTACTGGACTGTG 2092

Qy 2368 ATGACCATCTCGTAGTGG----  
 TACATTCCATTCTATTTAAGGTAAGCCCAAAGCCAC 2423  
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 Db 2093 GAAATAACATAGAATTGAAGTTTTAATTAAATACCACT-----  
 CAAACGAAAAGAACA- 2145

Qy 2424  
 TTTTGGATTTTCTCGACTGTCCGAGAAAAGTTGTGTAAGCGCCTGCGTTCTTCTGGGTTT 2483  
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 Db 2146 --GTAGTTTTT-----GTAGTTTTATATTGGATACTGAG-  
 GCATTAGG--A 2187

Qy 2484 GGCTAGATAGGGTTGTGTCCCTCTATGGAATGGAGAGTGATGTGGGCAAG-  
 GGTGTCATT 2542  
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 Db 2188 GGCATGAAAGG-----AAGAGGAATGAGGATTGA----  
 GACATGTGAAGACATT 2232

Qy 2543  
 TTCTCGCACAATACTCACTGAGGATGCTTCTGTAGAAGTGAGAAACACGATGAGTAC 2602  
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 Db 2233 GT---GCATTATA----TCAATGTGCATT--CTGTAGT--TCATTAACAAG----  
 GTAC 2277

Qy 2603  
 ATTCAGAATTACAATACTCACTCTCACTGGGTAACCTTCTCATGATAGATTTGTATGATC 2662  
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 Db 2278 ATGCAATAGT-CTAAAGAAC-----CAGAGTCACTACT-ATAGTGGCTTAACAT--  
 TT 2326

Qy 2663  
 AATACGGGTCTATTTTTATGTCAACTGAACACTGTAGGGTACCTTCCAGTCTTTTTCAAG 2722  
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 Db 2327 AATCTGTCTCCAATATTTTAACCAAGTGACACCG--

GGGTTTTTATCGAAGCATTTAC- 2383

Qy 2723  
ATTGTTAAATTGAGACAAGTAATTGAATAATTTGTCCTATTTTTATTTTAAAAAAGTGA 2782  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2384 -----TTAAATGA-ACAAATCATGGC-----TGT--  
TATATTAACCTTGAAATAAAATAT 2429

Qy 2783 ATGGACTGAAATGTTAAATGTGAATGTACATTTCTTAAT-  
TGCAATTTTTCTACTGAGTG 2841  
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Db 2430 ATTTA--AACATGTAAAAAAAAAAAAAAAAAGGCCACATGTGC--  
TCGAGCTGCAGGTCG 2485

Qy 2842 TTTGCACTA 2850  
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Db 2486 CGGCCGCTA 2494

RESULT 8

US-10-478-914-57/c  
; Sequence 57, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 57  
; LENGTH: 2336  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-57

Query Match 31.2%; Score 5366.5; DB 1; Length 2336;  
Best Local Similarity 44.0%; Pred. No. 0;  
Matches 1320; Conservative 0; Mismatches 904; Indels 773;  
Gaps 170;

Qy 16 CAGGCCGGGCGCA-GTGGC-----  
TCATGCCTGTAAGCCCAGCACTTTGGG 60  
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Db 2336  
CAGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTTTTTTGTATTCTCAGAGCT----- 2282

Qy 61  
AGGCGGAGGCGGGTGGATCCATTGAGGTCAGGAGCTCAAGACCAGCCTGGTCAACATGGT 120  
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|  
Db 2281 -GCCAG----GAGTGCATC-----GAGC-



Qy           640  
CTCTCTACTTCAAACAGCCCATGGAGGGAGGTATTATTATACTCCTTATGTTGACAGTGA 699

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Db           1889 TTCTCTTAAT-----  
TTTTAGTGTTTCGTGTTGATAATG- 1857

Qy           700  
AGAATCTGAGGCCCGAGAGAGGTTGGGGACTTGAGTAAAGTCACACAGCCCTGAGAGGCAG 759

                                | ||| ||||| | ||         |||| |         | || |  
Db           1856 -----TGTGAGTTTGGGAAAATGC--  
TAAGTAGCTTTTCACTTA----- 1820

Qy           760 GACCAGGGTTCCATTCTGCTCTATCCAG-TTCCAAGCCCTTGTGTTTTCCATTAT-  
GTT 817

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Db           1819 GAACACTGTTATTTT----CTCTTTAAAGTTTTCTA--CCTTACATTT---  
ATTATAGCA 1769

Qy           818  
TAGTGCCTCTTTGCTAACAGCAACATCTGCAAGATTTGTGTTGGTTTTTGATGGAGAACTC 877

                    ||||         ||||         | |||| |         || || |         |         |         || |||  
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Db           1768 TAGT-TATCTTT----ATAGCAT-AGATGCAGAA-----  
AGTAAGAGAGAGC 1728

Qy           878  
TAGCTCATCCACATGCTAGTGCCCAAGTGGTGGAGGGGCCACCTCAGCAGGTGGGTTCCTG 937

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Db           1727 TTGTTTTTTTCA-----AGAAAAACAACCC-----  
TTTAA 1700

Qy           938 AATGC-  
AGCCCAAGGCTGTCCCCGCAATGGGTGAGACTCGCTCCAAGTGGCCGCCCTCAGA 996

                    ||| |         ||||         || |         | || |         | | || ||||         | |         |||  
Db           1699 AATACTTTCCAA-----CCCATGAAGGG-A AAAATC-CTCCTTTTTTC--  
CCC----- 1656

Qy           997 GCAGGTGCCTAAGTCCTCCCTGGCAC-TGGCAGGCCTTACCTCACATTG-  
CTAAATTAAA 1054

                    || |||| |         || | |         || | || |         ||         ||| ||         | |         |||| |  
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Db           1655 -CAAGTGCATT----CTACTTATTACTTTGCA---  
TTTTTCTCCCAAAGTCCAAATTTAT 1604

Qy           1055 GCAATGCAATT--  
CCTCTTGGGTAAGAGGAATTCCTCCTTCTTTACTAACTGATCCCCAG 1112

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Db           1603  
GCAAAGAAAATAGAAACAAGTTCAAATGCAATGCATTAACCAATAAAACAAGTCTCCTT 1544

Qy           1113 CA----AGGAAATAAAATGTTAGGCTTTAAAAATCCCTACTTTGTCA-  
TATCAGACTATA 1167

                    ||         |||| |         ||         || || |         ||         | | |         ||         |||| |  
Db           1543 CAAATTAGGAACCAACC---TAAGCATTTGTAA-----  
AGTGTAGCAGAATCAGAATTCT 1492

Qy           1168  
TTCTAAAACATATATTTGAGCGAAAACCTGTTCATTGCGTCTAATTTCAAATATACAGAATCT 1227

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Db      1491 TTTAAAATTAGATTT----GGAACCTGAACT---ATATAATTCATAAT-----
TCT 1447

Qy      1228 CCTTAAGAGCTGTTG--
CCTTATTTTTTTTGTAAAGCCTCTCTGACATCAAATGGGGAGAA 1285
      |  |  |||  |  |||||  |  |  |||  |||  |  |  |
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Db      1446 CATTT--TTCTGTGGAATAATTATTTTATCTTT---CTC-CTGTATACCT----
GAAAAA 1398

Qy      1286
ATGGTGGCACCTCCAGACACCCTGAAACTACACACCATTTCTTCCCTGCTCAGCTTCTGC 1345
      |||  |||  |  |  |  |  |  |  |  |  |  |  |  |
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Db      1397 ATG-----TCCATA-GGCTTAAAGGGTCATGCTTTTACATTCCTTC----
CATAT-C 1352

Qy      1346 TCAGGAGTTCTGTGAGCTATGGGAAGGCCATTGGTTGTATTTGCTACTTTTACTT--
TCA 1403
      |||  ||  ||  |||  ||  ||  ||  |  ||  |  |  |||  |||  |||
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Db      1351 ACAG--GTACTATGAAGTAAGG--
AGACTTTTAGGTTTCTTTTGTCTTAAACTCAGACA 1296

Qy      1404 TCTTCCTCTGCTGTAGAG---
CCATTTAATGTTATTGTATATGCTGCTGGTGAGGTAAA 1460
      |||  |  ||  |||  |  |||  |  |  |  |  |  |  |  |
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Db      1295 GCTTTGTAAGCAGTAGTGTGTAGATTACAAGAGTTAGACAAA---
AGCAGGCGCGACTGA 1239

Qy      1461
GGTGGGTCCGGGTGCCTTCCCAGGGGTTAGAGGATGTTCAAAGGGCCGATTTTACAGAGGA 1520
      |  |  ||  |||  |||  |||  |  |  |||  |  |||  |  |
Db      1238 GAAGAGTT--GGTG-----GGGG--AGAAG-----CTTGGGGC--ACTTC--
CTGTC 1200

Qy      1521 GTTCAGAGGGCTTATGATGGATGGTGAGAGATTTGACA-
ACCACCAGAGCACATGTGCTC 1579
      |||  |  ||  |||  |  |  |  ||  ||  |||  |  |||  |
|
Db      1199 ACTCA----ACACATTCCAGATCACTAAAAAATTTCCACACCCTCTG----
CATTCCCCC 1148

Qy      1580 TGACCCTCTCCTGGGCATTGGTTCCTGCTGGTACCGGGCGGTTTCAGA--
CCTTCAAATAG 1637
      |  |||  |||  |||  |||  |||  |||  |||  ||  |  |
Db      1147 TTGCCCACTCC-----AGTTC-----
CCGGTATTTTCTGATTCCATATGTTGT 1105

Qy      1638 GTTGCTTTCAAAGAGCTTTTCAAGGCACTT--
ATTGAGAATTAATGTTTAAACAGACATAA 1695
      |  |  ||  |  |  |  ||  ||  |||  |  |  |  ||  ||  |  ||
Db      1104
GGTATTTACCATACTTCTCTCCCTCACTAGGCTCTGGCAAGACTGCTTCAGAGGGGATGC 1045

Qy      1696 TAGCC--
TAGATGAACCTCCCAAGAGATCTATTAAATCTTGTGGGCTGAATAAATATCTCG 1753

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|  
 Db 1044 ATTCTTTAGAT-TGCACAAAGCGGAGCTGGGAAA-  
 ATGGCTGGCAGTTTCAGAATCTAG 987  
  
 Qy 1754 T-----GCAGGACTGTGCAACAGTAGCCCAGAGCATCC---  
 TGCCTGTGGGCATCCAC 1803  
 |  
 Db 986 TCACGATCGCACGCATGAGCACCT----CACA---CATCCATGTCCCT-----  
 ACCCGC 940  
  
 Qy 1804  
 CTCCCAGGTGAGGGCAGTGGGAAGCTGGCCCCGACGGCAGCCAGAACTTGTTTCTCACCTC 1863  
 |  
 Db 939 CCCCCGCT-----C-----CCGCCCCTGCAGCTGGCTGACC---  
 TGTCTCACCCA 897  
  
 Qy 1864 CCACCAG-CAACCCCCCACCCA--AC--TCTGG----  
 GCCCCAGGCACACGAAGCACAAG 1914  
 |  
 Db 896 CTGCTGGCCTATCGAACGGCCAGGACTGTCTGGTTTTGGCTCGTGC---  
 CTTTGTCCATG 840  
  
 Qy 1915 TCT--  
 CAGGGGACCATTCCCACATTGGGGGATCCTGAGGGAGCCCATCACCGCCTCTTGC 1972  
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 Db 839 TCTGGCTTAGTTCTCTCTGTCTATGCTTGCCTCT-----ACCCC--  
 CACCGCCCCAGGC 787  
  
 Qy 1973 -  
 ATACAACGTGTCCACTAGGAGGCACGCCCAGTGTGGGAGAGATGTATGGTCTTGCCTTCC 2031  
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 Db 786 GGCACAAGTGT----TTGGCCACACAAAAGTAGAGATAGAAAAG-  
 GTGGTAAAAACTTCA 732  
  
 Qy 2032 ACCTGTAAAAACTGCACATATGCAAGCCATTTGCACTCTGG-----  
 AACTGCATGCCGTG 2086  
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 Db 731 AACTTTTCTAAATTCTC-----CAA--  
 CAGTTTATTTCTTGTGAATTTCTTCCTTCTTTA 679  
  
 Qy 2087  
 AAAACTCCTAATGGTGTGGAACCTTAGTTTGAATTTGAAATCACGCCGCATGCACAAAGGG 2146  
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 Db 678 AATACTCCATTTTAAG-AAAACAAA---AAAATTAATTATCTAAAGGCA---  
 AAGAATGG 626  
  
 Qy 2147 ACAGGCCCGAGGCCGACCTCAG-GT--  
 CATCCGCCCGCTGGCTGCAGAGCATCCCTGGGA 2203  
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 Db 625 AAAG-----CAACCTTTGTGTTTCTTATAATAACTGACTTCATAAC-  
 TCTCT---- 580  
  
 Qy 2204 GCCA-AGGCG---

AGGCCCGTGGAGCCTGAGCTTTGTGTAGCTCGAGCTTTGTGTAGCTC 2259  
 ||| ||| || ||| | |||| ||| || ||| | |||  
 |  
 Db 579 -CCAGCTGCGTTATGGGATGTGTATAAAAAGCTTC-TGTT-CT-  
 GAGAACAAAGGAGCAC 524

Qy 2260  
 GTGCACTTATTATGCACCACCTCCCTTCAGTCACCACTCCTCTTCCTCCGCCATCCTCAT 2319  
 |||| || | | | || | || | || | || | | |  
 |  
 Db 523 GTGCAGAAATGAGACGAAAAAATCC-ACTGACAGTATTCC-  
 ATTACACAAATTACTTAAA 466

Qy 2320  
 TTATACTGATTGCACACCCCCGCTCAAACAACAATGTCCTTATTATGATGACCATCTCG 2379  
 || | | || |||| |||| || | ||| ||| | |  
 Db 465 AGATTTTAGT--CAAGCCCC-----  
 TCAACAGATTCAATTTTAAATGGCTTT---- 420

Qy 2380  
 TAGTGGTACATTCCATTCTATTTAAGGTAAGCCCAAAGCCCACTTTTGGATTTTCTCGA 2439  
 |||| | | | ||| || || || | |||| | ||  
 |||  
 Db 419 TAGTTAAAAA---AAAAAAATTGAAAGT--GCTTA---CCCAGTAAAAGA---  
 ACCGA 373

Qy 2440 C--  
 TGTCCGAGAAAAGTTGTGTAAGCGCCTGCGTTCTTCTGGGTTTGGCTAGATAGGGTT 2497  
 |||| ||| ||| |||| | || | | | |||| |  
 |  
 Db 372 AGTAGTCC-TGAAGTGTACGTAAG-----ACTTTTTACAG---  
 TTGGATC-----T 330

Qy 2498  
 GTGTCCCTCTATGGAATGGAGAGTGATGTGGCAAGGGTGTCATTTTCTCGCACAATACA 2557  
 ||| | | || |||| | |||| | | ||| || ||||  
 ||  
 Db 329 TTGT--CAAAGGGGATGG-GGGTGATGGGAGAAAG-----CA-----GCA-----  
 ACG 289

Qy 2558 AC--TCACTGAGGAT---  
 GCTTCTGTAGAAGTGAGAAACACGATGAGTACATTCAGAATT 2612  
 || ||| | | | ||| |||| | | || || || || |||  
 ||  
 Db 288 ACAATCAAAAAAGTTCGAGCTGCTGTGG-----CTAGAGGACAAC-  
 TTCTGTGTT 240

Qy 2613  
 ACAATAACTCACTCTCACTGGGTAACCTTCTCATGATAGATTTGTATGATCAATACGGGTC 2672  
 | | | | ||| ||| |||| || | || | | |  
 |  
 Db 239 TCCAGATAGGATTCTTGCTG-----  
 TAGAAATGGAACCTCCAGCCAGCAC 195

Qy 2673  
 TATTTTTATGTCAACTGAACACTGTAGGGTACCTTCCAGTCTTTTTCAAGATTGTTAAAT 2732  
 || | | |||| | | | |||| ||  
 |||||  
 Db 194 AG-----CATCCTGTCCAGTAGAGAA-----ATGAGTTTGTC-----  
 GTTAAAA 154

Qy 2733  
TGAGACAAGTAATTGAATAATTTGTCCTATTTTTATTTTAAAAAAGTGAATGGACTG-- 2790  
| | | | | | | | | | | | | | | | | | | | | |  
Db 153 C-AAAAAAAAAATTAGATACTGGAACCCAGGCT-----  
AGACGAGGTATTGAACCGCG 102

Qy 2791 -AAATGTTAAATG-----  
TGAATGTACATTTCTTAATTGCAATTTTTCTACTGAGTGTT 2843  
| | | | | | | | | | | | | | | | | | | | | |  
Db 101 CCAGATTTTCCTTGCAGCCCTGTCTGCTCAGCTC-  
GCATTCCAGTAGGCCAACAG----- 49

Qy 2844 TGCCTATACTTTCTGGAATCTTATTTAACAAAAATAAGGGAAAAAATTGCTTGAC  
2900  
| | | | | | | | | | | | | | | | | | | | | |  
Db 48 TGCTCGAGGAATTCC-GCAGCTTTTAGAGCAGAA-----GTAACACTTCCGT-AC  
1

RESULT 9  
US-10-478-914-20/c  
; Sequence 20, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 20  
; LENGTH: 2495  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-20

Query Match 31.1%; Score 5351; DB 1; Length 2495;  
Best Local Similarity 44.0%; Pred. No. 0;  
Matches 1350; Conservative 0; Mismatches 962; Indels 758;  
Gaps 182;

Qy 8  
CAGGAAATCAGGCCGGGCGCAGTGGCTCATGCCTGTAAGCCCAGCACTTTGGGAGGCGGA 67  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2495 CTAG-----  
CGGCCGCGACCTGCAGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTTA 2441

Qy 68 GCGGGGTGGATCCA-TTGAGGTCAGGAGCTCA-AGACCAGCC-----  
TGGTCAACATGG 119  
| | | | | | | | | | | | | | | | | | | | | |  
|



Db 2440 CATGTTTAAATATATTTTATTTCA--  
AGTTAATATAACAGCCATGATTTGTTCAITTAAG 2383

Qy 120  
TGAAACCCCGTCTCTACTAAAAATACAAAAAAAATTAGCTGGGCGTGTTGGCGGGAG- 178  
||||| || | | ||| || | | | | | ||||| |

Db 2382 TGAAA-----  
TGCTTCGATAAAAACCCCGGTGTCACTTGGTTAAAATATTGGAGACAGA 2329

Qy 179 ---CCTGTAGTCCCAGCTACACGGGAGGCTAAGG----  
TGGGAGAATTGCTTGAACCCGG 231  
||| ||| ||| | | | | | | | ||||| || |||

Db 2328 TTAAATGTTAAGCCA-  
CTATAGTAGTGACTCTGGTTCTTTAGACTATTGCATGTACC--- 2273

Qy 232 GAGGCGGAGGTTG-CAGTGAGCT--  
GAGATTGCACCATTGCACTCCAGCCTGGGCGACAG 288  
||| | ||| || || |||| |||| | || | |  
Db 2272 -----TTGTTAATGAACACTACAGGAATGCA-CATTGATATAATGCAC-  
AATGTCTT 2225

Qy 289  
AGCAAGACTCTCTCAAAAAAAAAAAAAAGAAAGAAAGAAATCAGAAAATCGACCACAGT 348  
|| | ||| || || | ||| | |

Db 2224 CACATGTCTCAATC-----CTC-----  
ATTCCTCTTCCTT 2195

Qy 349  
GGTAGCCACCTGGCCTAATGCTGTGTTTTTGTACCTGACAGGGGTCACCTCATTTTAGGC- 407  
||| | ||||| ||| || | | ||| |

Db 2194 TCATGCCTC----CCTAATG-----CCT--CA---  
GTATCCAATATAAACT 2157

Qy 408 ACAACTCCTTC-  
ATTCTTTGTGAAATTAGTGAGTTTCCTTCTACCCGTCACCAGATTCAA 466  
|||| || | ||||| | | |||| | | | ||| |||||  
Db 2156 ACAAAACTACTGTTCTTTTCG-TTTGAGTGGTATTTAATTAAACTTCA----  
ATTC-- 2104

Qy 467  
TATGTTCTATTAATACACCGATAACCACAGGGGAAGGGCACTTGTGCTCTCCACCTGG 526  
||||| | | ||||| ||||| ||

Db 2103 TATGTTATTT-----CCACAG-----  
TCCAGT 2082

Qy 527  
TTACCACAGTCTCCATGGGTCTTTTGCCGTGACCACAAATAAAGGAAACACTCATCTA 586  
| | ||| ||| | ||||| ||| | |||

Db 2081 AATTTATTTTAAATTTGAGTAATTT-  
CAAATTCCACAAACAAACTGAAGAACAGCAATA 2023

Qy 587 GTATCTAAGTCGGGCTTTACAGTAACTATGCACCTTCTGTGTGCT---  
TCACCTCACTCT 643  
| | || | || | | ||| || ||| || ||||| |||



Qy 1161 GACTATATTCTAAACTATATTTGAGCGAAACC-----  
TGTCATTGCGTCTAATTT 1211  
|| | | | | ||| ||| | | | | | | | | | | | | | |

Db 1562 AGCTGTTTACATACTAAATTTAAGAGATTCAATATTAGAGTTTCTTTGTTTC---  
TTT 1506

Qy 1212 CAAATATACAGAAT-CTCCTTAAGAGCTGTTGC--CTTATT--  
TTTTTGTAAGCCTCTC 1266  
|| | ||||| | | | | | | | | | | | | | | | |

Db 1505 AAACACTACAGAGTGCAAATCAGGTTCT-TCACAACAGATTGAATATTGAGCAG-  
TTCTT 1448

Qy 1267 TGACATCAAATGGGGAGAAATGGTGGCACCTCCAG----  
ACACCCTGAAACTACACACCA 1322  
| | | | | |||| | | | | | | | | | | | | | |

Db 1447 TAAAGAAAGAGGGGAAGAAAAAAGC-  
CCAAGTGAATAAAACATTGAACTATTCCCC- 1390

Qy 1323 TTTCTTCCCTGCTCAGCTTCTGCTCAGGAGT--  
TCTGTGAGCTATGGGAAGGCCATTGGT 1380  
||| | | | |||| | | | |||| | | | | | | | |

Db 1389 -TTCGAAAAT----  
AAATTCTAAATGATGTGGAATGTGAAATAAGGTTTTAACATAGGT 1335

Qy 1381 TGTATTTGCTACTT-TTACTTTCAT-----CTTCCTCTGCT----GT----  
AGAGC 1422  
| | | | | ||| | | | |||| | | | | | | | |

Db 1334  
GATCCAAGTTTATAGTTAGAAACAAAAGAAGTCCTTCATGAAATAAAGGTTACAAGAAC 1275

Qy 1423 -CATTTAATGTTATTGTC----ATATGCTGC-TGGTGAGGTAAAGGTG-----  
GGTCC 1469  
| | | |||| | | | ||| ||| | ||| ||||| | | | | |

Db 1274 ACGTTGCCTGTTTTCCCCCATTATAAACTGAGAAGTG-  
GGTAAAGACGATGTTTCAGTAC 1216

Qy 1470 G-----GGTGCCTTCC----CAGGGGTT-----AGAGGATGTTCAAAGGGCC-  
GATTT 1512  
| | | |||| | | | ||| | | | | | | | | | | | |

Db 1215  
GAAAATAGGTGACTACAGGATCAGCGCTTCATCTCACATGCTGTACCCAAAGCCAGGCTG 1156

Qy 1513 CAGCAGGAGTTCAGAGGGCTTATGATGGATGGTGAGAGATTTGACAACCACCAGA--  
GCA 1570  
|| | | | | | | | | | | | | | | | | | | | |

Db 1155 TGGCTG----TC-----CATACGGTG-----  
GTGCGGTATAACCATAACCAAAAGGTG 1112

Qy 1571 CATGTGCTCTGAC--CCTCTCCTGGGCATTGGTTCCTGCTG---  
GTACCGGGCGGTTTACG 1625  
| | | | | ||| | | | | | | | | | | | | | |

Db 1111 CCTGGGGAGGGACGGCAACAC-----  
TGGGTCCTGCTGTCAGCATCAACTGGGGCTG 1060

Qy 1626 ACCTTCA--AATAGGTTGCTTTCAAAGAGCT--TTCAGGCACTTAT-  
TGAGAATTAATG 1680  
||| | | ||| |||| | || ||| ||| ||| | | | |

Db 1059 ACCATAAACAATGGGTTG-  
TGTCTCTGTAGCTTGTTCCTTCTTTCTCAGTGATTCTG 1001

Qy 1681 TTAAACAGACATAATAGCCTAGAT---  
GAACTCCCAAGAGATCTATTAAATCTTGTG-- 1735  
| | | || ||| | | |||| || || | | | |

Db 1000  
AAGCATCTAATTTATCCACCTTTGTCAAGTACTCCTTCATGACCTGGATGAAATAGGGCA 941

Qy 1736 -GGCTGAATAAAT-ATCTCGTGCAGGACTGTGCAACAGTAGCCCAGA--  
GCATCCTGCCT 1791  
||| ||| || | | |||| | || |||| | || ||||

Db 940 TGGCAAATCCATGATATTGTGCC--TCCATG---  
CAGTTTCTAGGACGACATCTGGCCT 886

Qy 1792  
GTGGGCATCCACCTCCCAGGTGAGGGCAGTGGGAAGCTGGCCCCGACGGCAGCCAGAACTT 1851  
|| | | |||| | || | || | | || |

Db 885 TAAAGAT---CGTAACAGGTAA--ACAG-----ACAAGCTCCAAAGCACTC---  
TCTT 840

Qy 1852 GTTTCCTACCTC-----CCAC--  
CAGCAACCCCCACCCAACCTCTGGGCCCCAGGCACAC 1904  
|||| | | |||| || | | || |||| ||

Db 839  
TTTTCTTCCTGCAAAAACCACTGCAGGAGTTCTTCAGCCAATTC-----A 795

Qy 1905  
GAAGCACAAGTCTCAGGGGACCATTCCACATTGGGGGATCCTGAGGGAGCCCATCACCG 1964  
| | | || |||| | || | |||| | |||| || | ||

Db 794 GTATCTTTAGATTGAGAAG--CA-TACTGCATT---  
GCATCCTTGTAAGGCTGTCT--- 744

Qy 1965 CCTCTTGCATACAACCTGTCCACTAGGAGGCACGC-----  
CCAGTGTGGGAGAGATGT 2016  
||||| ||| || | |||| | | || || || |||| |

Db 743 -TTCTTGC--ACAGCTCTACACTCTGTTTCCAGCGATTGTTGCCTTTG-  
AAGAGATAAGC 688

Qy 2017 ATGGTCTTGCTTCCACCTGTAAAACTGCACATATG-----  
CAAGCCATTTGCACTCT 2070  
| || | | |||| | || ||| ||| | | |||

Db 687 A-----  
GCAATTCTCCTGAACTCAATGAGTTCATGTTTTTCCAAACGCTGAGCAAGCG 635

Qy 2071 GGA-ACTG-CA----TGCCGTGAAAACCTCCTAATGGTGT-----GGAAC--  
TAGTTTGA 2117  
|| | || || || | | || | || | || | || | |

Db 634 AGATATTGTCAAAGTTGTCAT--

AAGCATCTATTGATGTTTCGAGAGCCTGATAATCTTC 577

Qy 2118 ATTTGAAATCACGCCGCATGCACAAAGGGACAGGCCAGGCCGACCTCA-  
GGTCATCCG 2176  
| | | | | | | | | | | | | | | |

Db 576 TTCTGTAAT-AAAAAGATTGTTCAATGATTCAATCACAGATTTGTTGTTATGGT--  
TCTG 520

Qy 2177  
CCCCTGGCTGCAGAGCATCCCTGGGAGCCAAGGCGAGGCCCGTGGAGCCTGAGCTTTGT 2236  
| | | | | | | | | | | | | | | |  
Db 519 --AACTGAACGCA---AATAC---GGTTTCA-----CCAGTGGTAGCTGT--  
TTAAC 478

Qy 2237 GTAGCTCGAGCTTTGTGT-  
AGCTCGTGCACTTATTATGCACCACCTCCCTTCAGTCACCA 2295  
| | | | | | | | | | | | | | | |  
| |  
Db 477 CTTGCT-GAAATAATTGACTGCACGAG-----TGTGATCCA--  
ACCGTGGAGACAGCA 428

Qy 2296  
CTCCTCTTCCTCCGCCATCCTCATTATATACTGATTGCACACCCCCGCTCAAACAACAAT 2355  
| | | | | | | | | | | | | | | |  
Db 427 C-----CATCAGCAA--ATCATTT-----  
AACAACAGA 402

Qy 2356  
GTCCTTATTATGATGACCATCTCGTAGTGGTACATTCCATTCTATTTAAGGTAAGCCCA 2415  
| | | | | | | | | | | | | | | |  
| | |  
Db 401 GGCTTGAAT-----TCTAAGTAGAACTGT--  
ATTGCTCTGTAGTATAGTTCCA 356

Qy 2416 AA--  
GCCCACTTTTGGATTTTCTCGACTGTCCGAGAAAAGTTGTGTAAGCGCCTGCGTTC 2473  
| | | | | | | | | | | | | | | |  
| | |  
Db 355 CATTGGCAACCTTGGTAAT-----GATATCTTTGAA-----TTGC-  
CCTTCTTTC 312

Qy 2474  
TTCTGGGTTTGGCTAGATAGGGTTGTGTCCCTCTATGGAATGGAGAGTGATGTGGGCAAG 2533  
| | | | | | | | | | | | | | | |  
Db 311 --CAGGCATCAGTTGGAT--GATT-----CATC-----ATG----  
GTAATTATGGCAT- 272

Qy 2534  
GGTGTCAATTTTCTCGCACAATACAACCTCACTGAGGATGCTTCTGTAGAAGTGAGAAACAC 2593  
| | | | | | | | | | | | | | | |  
|  
Db 271 --TATCATATTCT----TCATACTTGTCA-TACAAAAACACCAGT-----  
TCTGCCCAA 224

Qy 2594 GATGAGTACATTGAGAATTACAATAACTCACT-  
CTCACTGGGTAACTTCTCATGATAGAT 2652  
| | | | | | | | | | | | | | | |  
Db 223 GATGAGCTTGTTCGTC-----  
AGCTCTTAGCACCTTGGGAATATTCAC----- 181

Qy 2653 TTGTAIGATCAATACGGGTCTATTTTTATGTCAACTGAACA-  
CTGTAGGGTACCTTCCAG 2711  
 Db 180 -----TCTAGAC-----CAGAACAGCTCCAGG--  
 TGCTCCC-- 152

Qy 2712  
TCTTTTTCAAGATTGTTAAATTGAGACAAGTAATTGAATAATTTGTCCTATTTTTATTTT 2771  
 Db 151 TCATTTTC-TGAGGCTTAAATTTAG---AGT-ATAGAATAG-----  
 CTAATT----- 110

Qy 2772 AAAAAAGTGAATGGACTGAAATGTTAAATGTGAATGTACATTTCTTAAT--  
TGCAATTT 2829  
 Db 109 -----CAGTAAACATTC--CCATG-----  
 TGAGCTCGCTCAAGTCCCAGTGCTGC----T 66

Qy 2830 TTCTACTGAGTGTT-TGCACTATACTTT---CTGGAATCTTATT-  
TAACAAAAATAAAGG 2884  
 Db 65  
 TCCAACATGGTGATCAGCTCTTCAAAATAGCCACGATCCTGATAGTAGCCAGTA-----G 11

Qy 2885 GAAAAAATTG 2894  
 Db 10 GCCAACAGTG 1

RESULT 10  
 US-10-478-914-64  
 ; Sequence 64, Application US/10478914  
 ; Patent No. 7335755  
 ; GENERAL INFORMATION:  
 ; APPLICANT: NAKAGAWARA, AKIRA  
 ; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
 ; FILE REFERENCE: 7388-80899  
 ; CURRENT APPLICATION NUMBER: US/10/478,914  
 ; CURRENT FILING DATE: 2003-11-26  
 ; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-162775  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-255226  
 ; PRIOR FILING DATE: 2001-08-24  
 ; NUMBER OF SEQ ID NOS: 417  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 64  
 ; LENGTH: 2120  
 ; TYPE: DNA  
 ; ORGANISM: Homo sapiens  
 US-10-478-914-64

Query Match 30.6%; Score 5267; DB 1; Length 2120;  
 Best Local Similarity 42.0%; Pred. No. 0;  
 Matches 1253; Conservative 0; Mismatches 721; Indels 1008;  
 Gaps 181;

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Qy          17  
AGGCCGGGCGCAGTGGCTCATGCCTGTAAAGCCCAGCACTTTGGGAGGCGGAGGCGGGTG   76  
      ||||| | | | |    ||| | | | | | | ||||  
Db             2 AGGCC-TGTACGGAAG-----  
TGTTACTTCTGCTCTAAAAGCTGCGGA-----A   44  
  
Qy           77  
ATCCATTGAGGTCAGGAGCTCAAGACCAGCCTGGTCAACATGGTGAAACCCCGTCTCTAC   136  
      |||       || | || | || | ||| | || | | | | | | | | |  
|  
Db            45 TTCC-----TCGAGCACTGTTGGCCT-ACTGGAGTGC-  
TGAAGTAGGCGCGACGTGC   95  
  
Qy          137 TAAAAATACAAAAAAAAAAATTAGCTGG-  
GCGTGTGCGGGGAGCCTGTAGTCCCAGCTAC   195  
              | |         |||| ||||| | || | || | | | | | | | | |  
|  
Db            96 --CCGGTGC-----  
CTGGCGCGTGGTAGCAGGCGCCCCGGTGCCCCGGC--C   137  
  
Qy          196 ACGGGAGGCTAAGGTG-----  
GGAGAATTGCTTGAACCCGGGAGGCGGAGGTTGCAGTGA   250  
              | | | | | | | | || |||     ||| || ||        || |  
|  
Db           138 GGCGAAGACCATGGCGTTCATGGTGAA-----GACCATGGTGG-----  
GCGGCCA   182  
  
Qy          251 GCTGAGATTGCACCATTCGACT-  
CCAGCCTGGGCGACAGAGCAAGACTCTCTCAAAAAAA   309  
      ||||| | ||| |||| | |||||| | | | |  
Db           183 GCTGA---AGAACCT---  
CACTGGGAGCCTGGGAGGCGGCG-----                217  
  
Qy          310  
AAAAAAAAAGAAAGAAAGAAATCAGAAATCGACCACAGTGGTAGCCACCTGGCCTAATGC   369  
      | | ||| ||| | | | | ||| | | | | | | | | ||| | |  
||  
Db           218 -AGGATAAGGGAGATGGGGACAAG----TCGGCAGCCGAAG----CTCAGGGCATGA-  
GC   267  
  
Qy          370  
TGTGTTTTTGTACCTGACAGGGGTCCTCATTTTTAGGCACAACCTCCTTCATTCTTTGTGA   429  
      | |      |||| | ||| || | | | | ||| ||||| | | | | |  
||  
Db           268 CG-GGAGGAGTAC----GAGGAGTATC-----AGAAGCAACTCGTGA-----  
AGAGA   310  
  
Qy          430  
AATTAGTGAGTTTCCTTCTACCCGTCACCAGATTCAATATGTTCTATTAATACACCGATA   489  
      | | | |               | |                 || ||| | |  
|  
Db           311 AGATGGAG-----CGG-----  
GATGCACAGTTC   333  
  
Qy          490  
ACCACAGGGGAAGGGCACTTGTCGCTCTCCACCTGGTTACCACAGTCTCCATGGGTCTT   549  
      | ||||| ||||| | | | | | ||||| || | | | | | | | | |  
Db           334 A-CACAGAGGAAGG-----CAGAGCGGG---CCACA--CTGC--  
GGAGCCA   371
```

Qy 550  
 TTGCCGTGACCACAAATAAAGGAAACACTCATCACTAGTATCTAAGTCGGGCTTTACAGT 609  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 372 CTTCCGAG---ACAAATACCGG-----CTACCCAAGAA-----CGAG----  
 ACAG- 409

Qy 610  
 AACTATGCACCTTCTGTGTGCTTCACCTCACTCTCTACTTCAAACAGCCCATGGAG---- 665  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 410 -----ATGAGAGC--CAGATC-----  
 CAGATGGCAGGTGGAGACGT 443

Qy 666 GGAGGTATTATTATACTCCTTATGTTGACAGTGAAGAATCTGAGG----  
 CCCAGAGAGGT 721  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 444 GGAG-----CTGCCCCGGGAGCTGGCCAAGATG-ATC-  
 GAGGAGGACACAGAGGAGG 493

Qy 722 TGGGGACTTGAGTAAAGTCACACAG-CCCTGAGAGGCAGGACCAGGGTTCC-----  
 ATT 774  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 494 AGGAG-----GAGAAGGC-CTCAGTCCTTGGGCAGCTGG-  
 CCAGCCTTCCTGGCTTGAA 545

Qy 775 CCT--  
 GCTCTATCCAGTTCCAAGCCCTTGTGTTTTCCATTATGTTTAGTGCCTCTTTGCT 832  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 546 CCTGGGCTCACTCAAGGACAAGGCCAGG-----CCACACTG----GGGGATCT---  
 CA 592

Qy 833  
 AACAGCAACATCTGCAAGATTTGTGTTGGTTTTGATGGAGAACTCTAGCTCATCCACATG 892  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 593 AGCA--ATCAGCTG--AGAAGTGTCACGTCAT-----GTGACCACT-----  
 TCCCCGGG 637

Qy 893 CTAGTGCCCAAGTGGTGGAGGGGCCACCTCAGCAGGTGGGTTCTGAATG---CAGC--  
 CA 947  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 638 ---GTTACCCACTG--GGCTGGGCCCC-----  
 CATGAGGGCTAAGAGTGTGTCAACTTCC 687

Qy 948 AGGCTGTCCC---  
 CGCAATGGGTGAGACTCGCTCCAAGTGGCCGCTCAGAGCAGGTGC 1004  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 688 AGG--GACCCATACTCCATTTG-GGGCTTTGTTTCCCTTGCC--CCATC----  
 CTAGTTC 738

Qy 1005 CTAAGTCCT-----  
 CCCTGGCACTGGCAGGCCTTACCTCACATTGCTAAATTAAAGCAA 1058  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 739 C-AAGACCTTTCCCATCCATGCC---  
 CAAGCCTATCTTCTGGTTTC----- 781



Qy 1059  
TGCAATTCTCTTGGGTAAGAGGAATTCCTCCTTCTTTACTAACTGATCCCCAGCAAGGA 1118  
| | | | | | | | | | | | | | | | | | | | | |  
Db 782 ----TTCCTCTCCGCTGGGAGTAAAGTCCCCATCTTCACT-----  
CTACCCCTTCAGG-- 829

Qy 1119 AATAAAATGTTAGGCTTTAAAAATCCCTACTTTGTCATATCAGACTAT-----  
ATTCTA 1172  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 830 -----ACCCTCCCCAC-----  
CAGCTCAGCCTGTGGAGGCCTCCCA 865

Qy 1173 AAACATAT---ATTTGAGCGAAACCT-----  
GTCATTGCGTCTAATTTCAAATATACAGAA 1224  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 866 AGATTGTAGGAATAGGCCCATCCCTCTCTGGCCATGGC-  
CCCAAGTTCCTGCACACAGGA 924

Qy 1225  
TCTCCTTAAGAGCTGTTGCCTTATTTTTTTGTAAAGCCTCTCTGACATCAAATGGGGAGA 1284  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 925 GCACCCACAGAG-----  
AGACACACACAGGACACAA-----A 956

Qy 1285 AATGGTGGCACCTCCAGACACCCTGAAACTACACACCATTTCTTCCCTGCTCAG-  
CTTCT 1343  
| | | | | | | | | | | | | | | | | | | | | |  
Db 957 ACCCCTGGCACGTTTCAGAGA--CAGAAGCCACAGAC----  
ACATCCCGGCACAGACAGAC 1010

Qy 1344  
GCTCAGGAGTTCTGTGAGCTATGGGAAGGCCATTGGTTGTATTTGCTACTTTTACTTTTCA 1403  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1011 ACACACG-----AGGCCA-----  
GCTCCCTTGCGTGTC- 1038

Qy 1404  
TCTTCCTCTGCTGTAGAGCCATTTAATGTTATTGTCATATGCTGCTGGTGAGGTAAAGGT 1463  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1039 -CAGCCCCTCCAG--ACACCA-----  
CCTACT----- 1061

Qy 1464  
GGGTCCGGGTGCCTTCCCAGGGGTTAGAGGATGTTCAAAGGGCCGATTTTCAGCAGGAGTT 1523  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1062 ----CAGAAAC--TCTGAGAG---AGAGCATGGGCAGACACCC----  
TCAGCAG----A 1103

Qy 1524 CAGAGGGCTTATGATGGATGGTGAGAGATTTGACAACCACC---AGAGCACATG--  
TGCT 1578  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1104 CAGGAGGCCT-----  
GAGTTCAGTCTCCACCTTTATTGTTCTTGAAAGCC 1149

Qy 1579 CTGACCCTCTCCTGGGCATTGGTTC--  
CTGCTGGTACCGGGCGGTTTCAGACCTTCAAATA 1636  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1150 CCTGCTCTCT-CTGAGCCTTATTTTCATCATCTGTAAAATGGGAAT---  
GTCCT----- 1198

Qy 1637  
GGTTGCTTTCAAAGAGCTTTTCAGGCACTTATTGAGAATTAATGTTTAAACAGACATAAT 1696  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1199 GAATGACTTCTAAGGCTCTTTCTGGC-----TTGAACTGTC---  
AG 1236

Qy 1697  
AGCCTAGATGAACTCCCAAGAGATCTATTAAATCTTGTGGGCTGAATAAATATCTCGTGC 1756  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1237 AGCCAAGCCACATCCC-----TC-----  
CTTGGGC 1262

Qy 1757 AGGACTGTGCAACAGTAGC--  
CCAGAGCATCCTGCCTGTGGGCATCCACCTCCCAGGTGA 1814  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1263 AGG-----GCAGCAGCTGCTGCCACAGCCTCCAGC-----GGCTGCCAC-----  
TGT 1304

Qy 1815 GGGCAGTGGGAAGCTGGCCCGA-----CGGCA----  
GCCAGAACTTGTTTCTCA 1859  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1305 GGGCTCTGGG-AGCCGGAGCGATGCTGTGTGAGAGGCAGAGTGCCA-  
AGGATGAAGCT-G 1361

Qy 1860 CCTCCCACCAGCAACC--CCCCA-  
CCCAACTCTGGGCCCCAGGCACACGAAGCACAAGTC 1916  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1362 GCACTGAACAGTAAGCGGCTCCAGGCCTCCTCTGGGCCCAGGGCCC----  
AGCCAATTTT 1417

Qy 1917 TCAGGGGACCATTCCACATTGGGGGATC-CTGAGGGAGCCCATCAC-----  
CGCCTCT 1969  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 1418 T----GTTCTGTTC--TGTAGAACGCTCTCT---  
GGATTCCATAGCTGGAATCTCCTCT 1468

Qy 1970  
TGCATACAACTGTCCACTAGGAGGCACGCCAGTGTGGGAGAGATGTATGGTCTTGCCCTT 2029  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 1469 --CTTAGCTCAGTGAAAAATAAAATC-CCAAATG-----GTGTG--  
CCTACCTT 1513

Qy 2030 CCACCTGTAAAACTGCACATATGCAAGCCATTTGCACTCTGGAAGTGCATG-----  
CCG 2084  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 1514 CCCAC--TTCTTACTG-----GCTT-CCA---  
GGAGTCTTGAGTTTCATAGCCCCCG 1560

[illegible]



Qy 7 TCAGGAAATCAGGCCGGGCGCAGTGGCTCATGCCTGTAAGCCC-----  
 AGCACTTTG 58  
 || | |||| | | |||| || | ||  
 |||  
 Db 2119 TCTAG-----  
 CGGCCGCGACCTGCAGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTA 2065  
  
 Qy 59 GGAGGCGGAGGCGGGTGGATCCATTGA-----  
 GGTCAAGGAGCTCAAGACCAGCCTGGT 111  
 || || | | || |||| |||| ||| | |  
 ||||  
 Db 2064 AAAGAATGA----GTTACATTTATTGATATGGTTTGTGCATATGCTTTATA----  
 AATGGT 2013  
  
 Qy 112  
 CAACATGGTGAACCCCGTCTCTACTAAAAATACAAAAAAAAAATTAGCTGGGCGTGTTG 171  
 || | | |||| | | | | | | | | | | || | |  
 ||  
 Db 2012 CACCCT-TTGAAA---  
 CATGTATTATTACTATTTGGGGGAGAGGGGGACTGTTCAATTTA 1957  
  
 Qy 172  
 GCGGGAGCCTGTAGTCCCAGCTACACGGGAGGCTAAGGTGGGAGAATTGCTTGAACCCGG 231  
 ||| | | | | |||| | | | | | | | | | |  
 |  
 Db 1956 CAGGGGACAAGCAAGACAGGCT-CAAGGAGGGAAAGGACAGGCTCAAAG--  
 TCATCACAG 1900  
  
 Qy 232 ---GAGGCGGAGGTTGCAGTGAGCTGAGATTGCACC-----  
 ATTGCACTCCAGCCTGGG 282  
 | ||| | | |||| | | || | | |||| | ||  
 Db 1899 TGTGGGGCTG-GAATGCAGT----  
 TGCCCTTCCTTCTTTCTTTTGCACATCTTCC---- 1849  
  
 Qy 283  
 CGACAGAGCAAGACTCTCTCAAAAAAAAAAAAAAGAAAGAAAGAAATCAGAAAATCGAC 342  
 | |||| | | ||| | | |||  
 Db 1848 -----GTCTCT-----  
 AGGGTGAGGAGGGGTGCAGG----- 1823  
  
 Qy 343  
 CACAGTGGTAGCCACCTGGCCTAATGCTGTGTTTTGTACCTGACAGGGGTCACCTCATTT 402  
 |||| || || | | |||| || || | |  
 Db 1822 CACAG-----GCACCAAGACAGCTGCGGT-----  
 CCAGCCC----- 1791  
  
 Qy 403  
 TAGGCACAACCTCCTTCATTCTTTGTGAAATTAGTGAGTTTCCTTCTACCCGTCACCAGAT 462  
 ||| | | || || |||| || || || || || || ||  
 |  
 Db 1790 -CGGCCC--CACCTGTGGTCTCAGTGACGCCCCAGAGGCCCATCTTCCC--CA-  
 CATAA 1737  
  
 Qy 463  
 TCAATATGTTCTATTAATACACCGATAACACAGGGGAAGGGCACTTGTCGCTCTCCC-- 520  
 | | |||| || || || || || || | | || || ||  
 Db 1736 TGAGGCTGCTC----CATCCTCCTCAAAGCCCA-----  
 GACCTATTTTATAAGCCCCA 1688  
  
 Qy 521 -

ACCTGGTTACCACAGTCTCCATGGGTCTTTTGCCGTGACCACAAATAAAGGAAACACTC 579  
 ||| ||| || || ||| | || || ||| | |||  
 |||||  
 Db 1687 GACC-----CCACCTTCACCCAGGGCC-----CCAAGAGAACAGA-  
 GCTGGAGACACT- 1641

Qy 580  
 ATCACTAGTATCTAAGTCGGGCTTTACAGTAACTATGCACCTTCTGTGTGCTTCACCTCA 639  
 |||| ||| | ||| ||| |||  
 |||||  
 Db 1640 -----TCTA-----CT-----CCTAGCA----CTGGATGC----  
 CCTCT 1615

Qy 640 CTCTCTACT-  
 TCAAACAGCCCATGGAGGGAGGTATTATTATACTCCTTATGTTGACAGTG 698  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 1614 C-CCCTCCTGTGAAGCTGTAGGTGGGGGGTGG----AGGACACCCCTTT-----  
 AAGG 1567

Qy 699 AAGAATCTGAGGCCCAGAGAGGTTGGGGACTTGAGTAAAGTCACACAGCCCTGAG-  
 AGGC 757  
 || || | || | | || | ||| | ||| || || || |  
 |||  
 Db 1566 CAGGCTCGGGGGGCTA-TGAACTCCAAGACTCCTG-  
 GAAGCCAGTAAGAAGTGGGAAGGT 1509

Qy 758 AGGACCAGGGTTCCATTCTGCTCTATCCAGTTCCAAGCCCTT-----  
 GTGTTTTCCAT 811  
 ||| || |||| | | | | ||| | || | | | |  
 Db 1508 AGGCACA-----  
 CCATTTGGGATTTTTATTTTCACTGAGCTAAGAGAGGAGATTCCAGC 1454

Qy 812  
 TATGTTTAGTGCCCTCTTTGCTAACAGCAACATCTGCAAGATTTGTGTTGGTTTTGATGGA 871  
 |||| | || | ||| ||| || || | | |||  
 Db 1453 TATG-----GAATC-----CAGAGAGCG--  
 TTCTACAGGAACAGAACAGAAATTG----- 1411

Qy 872 GAACTCTAGCTCATCCACATGCTAGTGCCCAAGTGGTGG--  
 AGGGGCCACCTCAGCAGGT 929  
 ||| || || | |||| || || || || || || | | |  
 |  
 Db 1410 -----GCTGGGCC-----CTGG-GCCC-AGAGGAGGCCTGGAGCCGCTT--  
 ACTGTT 1368

Qy 930 GGGTTCTGAATGCAGCCAAGGCTGTC-----  
 CCCGCAATGGGTGAGACTCGCTCCAACATG 984  
 || | | || || ||| || | || | |||||  
 ||  
 Db 1367 CAGTGCCAGCTTCATCCTTGGCACTCTGCCTCTCACAC-----  
 AGCATCGCTCCGGCT- 1315

Qy 985 CCC---GCCCTCAG-  
 AGCAGGTGCCTAAGTCCTCCCTGGCACTGGCAGGCCTTACCTCAC 1040  
 ||| |||| || |||| || | ||| ||||| | |  
 Db 1314 CCCAGAGCCACAGTGGCAGCCGCTGGA-----GGCTGTGGCAG-----  
 CAGC-- 1272

Qy 1041 ATTGCTAAATTAAAGCAATGCAATTCCTCTTGGGTAAGAGGAATTCCTCCTT--

CTTTAC 1098  
|  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1271 --TGCT-----GCCCTGC----CCAAGGAGGGATGTGGG-----  
CTTGGCT--C 1236

Qy 1099 TAACTGATCC--  
CCAGCAAGGAAATAAAATGTTAGGCTTTAAAAATCCCTACTTTGTCAT 1156  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 1235 TGACAGTTCAAGCCAGAAAG-----AGCCTTAGAA-----  
GTCAT 1201

Qy 1157  
ATCAGACTATATTCTAAACTATATTTGAGCGAAACCTGTCATTGCGTCTAATTTCAAAT 1216  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 1200 TCAGGAC---ATTC-----CCATTTT-----ACAGATGATG-----  
AAAT 1169

Qy 1217  
ATACAGAATCTCCTTAAGAGCTGTTGCCTTATTTTTTTGTAAAGCCTCTCTGACATCAAA 1276  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 1168 A-----AGGCTCAGAGAGAGCAGGGGCTT-----  
TCAAGAACAATAAA 1131

Qy 1277 TGGGGAGAAATGGTGGCACCTCCAGACACCCTGAAACTACACACCATTCTTCCC-  
TGCT 1335  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 1130 GGTGGAGAC----TGGAAC--TCAGGCCTCCTG--  
TCTGCTGAGGGTGTCTGCCCATGCT 1079

Qy 1336  
CAGCTTCTGCTCAGGAGTTCTGTGAGCTATGGGAAGGCCATTGGTTGTATTTGCTACTTT 1395  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1078 C----TCT-CTCAGAGTTTCTGAGTGGTGGTGTCTGG--AGGGGCTGGACACGC-  
AAGGG 1027

Qy 1396 TACTTTCATC---TTCCTCTG-  
CTGTAGAGCCATTTAATGTTATTGTCATATGCTGCTGG 1451  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 1026 AGCTGGCCTCGTGTGTGTCTGTCTGT---  
GCCGGGATGTGTCTGTGGCTTCTGTCTCTGA 970

Qy 1452 TGAGGTAAAGG----TGGGTCC---  
GGGTGCCTTCCCAGGGGTTAGAGGATGTTCAAAGG 1504  
| | | | | | | | | | | | | | | | | | | | | |  
Db 969 ACGTGCCAGGGGTTTTGTGTCTGTGTGTGTCTC-----  
TGTGGGTGCTC----- 923

Qy 1505 GCCGATTTACAGCAGGAGTTCAGAGGGCTTATGATGGATGGTGAGAGATTTGACAA--  
CCA 1562  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 922 -CTGTGT---GCAGGA--ACTTGGGGCC----  
ATGGCCAGAGAGGGATGGGCCTATTCT 873

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Qy          1563
CCAGAGCACATGTGCTCTGACCCCTCTCCTGGGCATTGGTTCTTGCTGGTACCGGGCGGTT 1622
      ||      |||  |  |||  ||  |||  ||      |||||  |||  ||
|
Db          872 ACA---ATCTTGGG---AGGCCTCCAC--AGGC--TG-----AGCTGGTG--
GGGAGGGT 830

Qy          1623 CAGACCTTCAAATAGGTTGCTTTCAAAAGAG--
CTTTCAGGCACCTTATTGAGAATTAATG 1680
      |      |  |  |||  |  |  |  |  |  |||  |||  |  |  |
|
Db          829 C-----CTGAAGGGTAGAGTGAAGATGGGGACTTT-----ACTCCCAGCGGA--
GAGG 784

Qy          1681
TTTAAACAGACATAATAGCCTAGATGAACTCCCAAGAGATCTATTAAATCTTGTGGGCTG 1740
      |||  |  |  |||  ||  |  |      ||  |  |||  |  |||||
|
Db          783 AAGAAACC-AGAAGATAGGCTTGGGG-----CATG-
GATGGGAAAGGTCTTG-----G 738

Qy          1741 AATAAATATCTCGTGCAGGAC-TGTGCAACAGTAGCCCA---GAGCAT-----
CCTGCC 1790
      ||      ||  |  ||  |  |  |  |||  |||  |||  |||  |||
|
Db          737 AA-----
CTAGGATGGGGCAAGGGAAACAAAGCCCCAAATGGAGTATGGGTCCCTGGA 685

Qy          1791 TGTGGGCATCCACCT--CCCAGGTGAGGG-----
CAGTGGGAAGCTGGCCCCGACGGCA 1841
      ||  ||  |  |  |  ||  ||  ||      |||||  |  |  |||  |
|
Db          684 AGTTGACACACTCTTAGCCCTCATGGGGGCCAGCCCAGTGGGTAAC---CCCGG-
GGAA 629

Qy          1842 G-----CCAGAACTTGT---TTCTCACCT-
CCCACCAGCAACCCCCCACCCTCTGGG 1892
      |      ||  ||  ||  |||||  ||  |  |  |  |||||
|||||
Db          628
GTGGTCACATGACGTGACACTTCTCAGCTGATTGCTTGAGATCCCCCAGTGTGGCCTGGG 569

Qy          1893 CCCCAGGCACACGA---AGCACAAG-TCT---CAGGG-----GACCA--
TTCCCACATTG 1938
      ||  |  |  ||  |||  ||  |  ||  |||  |  |||  |  |||
|
Db          568 --
CCTTGTCCTTGAGTGAGCCCAGGTTCAAGCCAGGAAGGCTGGCCAGCTGCCCA----- 516

Qy          1939 GGGGATCCTGAGGGAGCCCATCACCGCCTCTTGCATACAAC--
TGTCCTACTAGGAGGCAC 1996
      |||  |||||  ||  ||  |||||  |  |  |  |||||  |
|
Db          515 -AGGA--CTGAGG---CCTTCTCCTCCTCCT-----CCTCTGTGTCCTC-----
CTC 475

Qy          1997
GCCCAGTGTGGGAGAGATGTATGGTCTTGCCCTCCACCTGTAAAAACTGCACATATGCAA 2056
      |  ||      ||||  |  |  ||  |  |  ||  |||  |  |
|
Db          474 GATCA-----
TCTTGGCCAGCTCCCCGGGGCAGCTCCACGTCT---- 438

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Qy          2057
GCCATTGCACTCTGGAACTGCATGCCGTGAAAACCTCCTAATGGTGTGGAACCTTAGTTTG 2116
      |||   |||   |||||   |||   |   |   |       |||   |   |   ||   |   |
||||
Db          437 -CCACCTGCCATCTGGATCTGGCTCTCAT-CTGTCTCGTTCTTGGGTAG-
CCGGTATTTG 381

Qy          2117
AATTTGAAATCACGCCGCATGCACAAAGGGACAGGCCAGGCCGACCTCAGGTTCATCCG 2176
      |   |||   |   |   ||||           ||   |               |||||   |||   |
||
Db          380 TCTCGGAAGTGGCTCCGC-----AGTG-----TGGCCCG--CTCTG-----
CCT 344

Qy          2177 CCCGCTGGCTG--CAGAGCATCCCTGGGAGCCA-AGGCGAGGCC-CGTGGAGC--
CTGA- 2229
      ||   |||   ||   |   |   |||||   |   |||   |   ||   ||   |   ||
||||
Db          343 TCCTCTGTGTGAACTGTGCATCCC---
GCTCCATCTTCTCTTCCACGAGTTGCTTCTGAT 287

Qy          2230
GCTTTGTGTAGCTCGAGCTTTGTGTAGCTCGTGCACCTATTATGCACCACCTCCCTTC-A 2288
      ||           ||||   ||           ||||   |||   ||   ||   ||   ||   ||
Db          286 ACTC-----CTCGTACTCCTCCCGGCTCATGCCCTGA----
GCTTCGGCTGCCGACTT 238

Qy          2289 GTCACCACTCCTCTTCCTCCGCCATCCTCATTTATACTGATTGCACACCCCCC--
GCTCA 2346
      |||   |||           |||   |||           |||||           ||   |   ||   |||
||||
Db          237 GTCCCCA----TCTCCCT----TATCCTC-----GC-
CGCTCCCAGGCTC- 201

Qy          2347
AACACAATGTCTTATTATGATGACCATCTCGTAGTGGTACATTCCATTCTATTTAAG 2406
      ||   ||           ||   ||           ||   ||           ||           |||   |||
|
Db          200 ----CCAGTGAGGTTCTTCAGCTGGCCGCC-----CA--
CCAT-----G 168

Qy          2407
GTAAGCCCAAAGCCCACTTTTGGATTTTCTCGACTGTCCGAGAAAAGTTGTGTAAGCGCC 2466
      ||           |   |   |   |   |   |   |   |   |||   |   |   |   |   |
|||||
Db          167 GTCTTCACCATGAACGCCATGG----TCTTCGCCGGCCGGGGCACCG-----
GGCGCC 119

Qy          2467
TGCGTTCTTCTGGGTTTGGCTAGATAGGGTTGTGTCCCTCTATGGAATGGAGAGTGATGT 2526
      |||   ||   |   |   |   ||           ||
Db          118 TGC-TACCAC-GCGCCAGGC-----
ACC----- 98

Qy          2527
GGGCAAGGGTGTCATTTTCTCGCACAATACAACCTCACTGAGGATGCTTCTGTAGAAGTGA 2586
      |||||   |           |   |||   |   |   ||   |   |   ||   |   |
||||
Db          97 GGGCACG-----TCCGCGCCTACTTCAGCACTCC-AGTAGGC-----
CAACAGTG- 54

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Db 2114 AC-----ATTGCATTTTCC-----  
ACTTACAATACAGTGTTTATAAAGTGCA 2073

Qy 263 C---  
CATTGCACTCCAGCCTGGGCGACAGAGCAAGACTCTCTCAAAAAAAAAAAAAAGA 319  
||| | ||| |||| | | | | | || |

|||  
Db 2072 ATGTTATTTCTTCC--CCTGTGCATATGTTCCATATTC-----  
AAGTATTGAGA 2025

Qy 320  
AAGAAAGAAATCAGAAAATCGACCACAGTGGTAGCCACCTGGCCTAATGCTGTGTTTTTG 379  
| | ||| | | | |||| | | |

|||||  
Db 2024 ATGCC-----CAGTAACTT-ACTA-----TAGCAGCTTAAC-----  
TTTTTA 1989

Qy 380 TACCTG--ACAGGGGTCACTC--  
ATTTTAGGCACAACCTCCTTCATTCTTTGTGAAATTAG 435  
| ||| |||| | || | ||||| ||||| ||| |

|  
Db 1988 AAAGTCCACAGAATTTGCTACGAATTTAGG-----TCCTTCA---  
AATGTTTTAAATG 1938

Qy 436 TGAGTTTCCTT-  
CTACCCGTCACCAGATTCAATATGTTCTATTAATACACCGATAACCAC 494  
|| | | ||| || | || | ||| |||| ||| |

|  
Db 1937 TGTGGAACAATGCTA--CATC-----TACACTTGGTTGGCTTAATCAACC---  
TCTTC 1890

Qy 495 AGGGGAAGGGCACT--  
TGTCGCTCTCCACCTGGTTACCACAGTCTCCATGGGTCTTTTG 552  
| || |||| | || | ||| || || ||

Db 1889 AATGG-TGGGCCCTGAGGAAGCACCACCAGAGGG-----  
AGGAGCT---- 1850

Qy 553  
CCGTGACCACAAATAAAGGAAACACTCATCACTAGTATCTAAGTCGGGCTTTACAGTAAC 612  
|| ||||| ||||| | | | ||| ||

Db 1849 CC---ACCAC-----CAGGAAATCCCC-----  
CAGGCATT----- 1823

Qy 613  
TATGCACCTTCTGTGTGCTTCACCTCACTCTCTACTTCAAACAGCCCATGGAGGGAGGTA 672  
||| ||| || | |||| | || |

Db 1822 -----CCTCCTG---GCAT-GCCTC-----  
CTGCAC----- 1801

Qy 673  
TTATTATACTCCTTATGTTGACAGTGAAGAATCTGAGGCCAGAGAGGTTGGGGACTTGA 732  
| | ||| ||| |||| | | |||| ||||

Db 1800 -TCTGGTACAGCTT-----GGTGATGA-----  
TGGGGTTGCAAACTT-- 1765

Qy 733 GTAAAGTCACACAGCCCTG--AGAGGCAGGACCAGGGTTCCATTCTGCT---  
CTATCCA 787

|| | |||| | | | | | ||| |||| | | ||  
Db 1764 -----TCTC-CAGCTCTTTCTGTTGATGTTCAA--ATTG--  
TTCCTTCTCAGCAGTCTG 1716

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Qy          788 GTTC-----CAAGCCC-
TTGTGTTTTTCCATTATGTTTAGTGCCCTCTTTGCTAACAGCAACA 842
      |||      |||||      |||      || |||||      | ||| | ||| |
|
Db          1715 ATTCTTATCAAGCCAGTTGATAATTTCATTA-----CACTTGTC---
CAGAATCT 1669
Qy          843 TCTGCAAGATTTGT-----GTTGGTTTTG--
ATGGAGAACTCTAGCTCATCCACATGC 893
      ||||      |||||      ||| | |||      || ||      | ||||| ||
|
Db          1668 TCTG-----TTTGTCCCTCATCGTTAATCTTGCCTTGAAG-----TTTCTCATCTTCA-
AC 1620
Qy          894 TAGTGCCCAAGTGGTGGAGGGGCCACCTCAG---CAGGTGGGTTC-
TGAATGCAGCCAAG 949
      |||      || || |||      | | |      || |||      ||| || |||      ||
Db          1619 AGTTGCTTTTCATGTTGAAGG-----
CATAGGACTCAAGTGAATTCTTGGATGACACCT-- 1567
Qy          950 GCTGTCCCCGCAATGGGTGAGACTCG-CTCCA-----
ACTGCCCCGCCCTCAGAGCAGG 1001
      |||||      |      ||      |||      || ||      ||| | | | ||      |
||
Db          1566 --TGTCCT-C-----TGCTTCTCATCTTCAGCTTTGTACTTCTCAGCTTC----
CTGG 1520
Qy          1002 TGCCTAAGT-----
CCTCCCTGGCACTGGCAGGCCTTACCTCACATTGCTAAATTAAAG 1055
      | || |      || ||| || |      | | ||||      |      | || | |
||
Db          1519 ACCATACGTTCAATGTCTTCCTTGCTCAAACGGCCCTTGTC-----
ATTAGTGATAG 1468
Qy          1056
CAATGCAATTCTCTTGGGTAAGAGGAATTCTCCTTCTTTACTAACTGATCCCCAGCAA 1115
      ||| |      | |||||      |||| | | ||      || |||
|||||
Db          1467 TAAT-CTTGTTCTCTT-----TTCC-CGTACT-----
CTTGTCACAGCAG 1429
Qy          1116
GGAAATAAAATGTTAGGCTTTAAAAATCCCTACTTTGTCATATCAGACTATATTCTAA-- 1173
      || || | | |      |||      | | ||||| |      |||| | ||| |
Db          1428 AGACATTGAGTATAC--CATTGG-----
CATCAATGTCAAAAGTGACTTCAATCTGAGG 1377
Qy          1174
AACTATATTTGAGCGAAACCTGTCATTGCGTCTAATTTCAAATATACAGAATCTCCTTAA 1233
      ||| | | | | | |      ||      ||| | | | ||||| |      ||
Db          1376 AAC-ACCTCGGGGTGCAGGAGGT--ATGCCTGTGAGTTCAAACCTG-----
CCAAGC 1328
Qy          1234
GAGCTGTTGCCTTATTTTTTTTGTAAGCCTCTCTGACATCAAATGGGGAGAAATGGTGGC 1293
      | ||||      |      ||||| | | | | ||
|
Db          1327 AGGTTGTTATC-----
CTTTGTCATGGCAGCCT-----C 1299

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Qy          1294 ACCTCCAGACACCCTGAAACTACACACCATTTCCTCCCTG---
CTCAGCTTCTGCTCAGG 1350
      ||| || | | ||||| | ||||| | | | ||| | |
|
Db          1298 GCCTTCATA-AACCTGAATAAGCACACCAGG-----
CTGTTTGTGAGAATAGGTAGTGA 1246

Qy          1351 AGTTCTGTG--AGCTATGGGAAGGCCATTGGTTGTATTT-
GCTACTTTTACTTTTCATCTT 1407
      || ||||| | || | | | | ||| | ||| |
Db          1245 AGGTCTGTGTCTGCTT--GGTAGG--
AATGGTGGTATTACGCT----- 1207

Qy          1408 CCTCTGCTGTAGAGCCATTTAATGTTATTGTCAT-
ATGCTGCTGGTGAGGTAAAGGTGGG 1466
      || || || || | | | | ||||| | | | |
Db          1206 ----TGATGAGGA--CA-----
GTCATGACTCCACCAG----- 1180

Qy          1467
TCCGGGTGCCCTTCCAGGGGTTAGAGGATGTTCAAAGGGCCGATTTTCAGCAGGAGTTTCAG 1526
      | | | | | ||| || | ||||| || | | | | |||
||
Db          1179 --CAGTTTCAATACCAAGGGAAAGAGGA-GT-----GACATC--CAAGAG--
CA- 1138

Qy          1527
AGGGCTTATGATGGATGGTGAGAGATTTGACAACCACCAGAGCACATGTGCTCTGACCCT 1586
      || || || | | | ||| || | |||| | ||| | |||
Db          1137 ---GCAAACTCTGAACATTCTCAGACTTGT----CTCCAG---
ACAAGATGGCTG----- 1093

Qy          1587
CTCCTGGGCATTGGTTCCTGCTGGTACCGGGCGGTTTCAGACCTTCAAATAGGTTGCTTTC 1646
      ||||| || | ||| || | || | |||| | |||| |
Db          1092 --CCTGGACAG-----CTGC----ACCATAAGCAACAG--
CTTCATCAGGGTTGAT--- 1050

Qy          1647
AAAAGAGCTTTTCAGGCACTTATTGAGAATTAATGTTTAAACAGACATAATAGCCTAGATG 1706
      | | ||||| | | | | | ||| | | | | |
|
Db          1049 -----GCTCTTATT-----CAGTTCTTTTC-
CATTGAAG 1022

Qy          1707
AACTCCCAAGAGATCTATTAAATCTTGTGGGCTGAATAAATATCTCGTGCAGGACTGTGC 1766
      || | | | || | | ||||| || | | ||| ||
|
Db          1021 AAGTCTTGGAGAAGCTTCTGAATCTTG-GGGAT-----
ACGAGTAGAAC----C 978

Qy          1767 AACAGTAGCCAGAGC---ATCCTGC--
CTGTGGGCATCCACCTCCCAGGTGAGGGCAGT 1821
      | || | || | | ||| || | ||| | ||| | |||
Db          977 ACCA----ACCAGGACAATATCATGAATCTGTG-----ACTTGTCTAGT-
TTGGCATC 930

Qy          1822 GGGAA--

```

GCTGGCCCGACGGCAGCCAGCAACTTGTTTCTCACCTCCCACCAGCAACCCCCC 1879  
 Db 929 TCGAAGGGCTTTCTCTACTGGGTCCAGG----  
 GTGCCACGGAACAGGTCAGCATTCACT 874  
 Qy 1880  
 ACCCAACTCTGGGCCCCAGGCACACGAAGCACAAGTCTCAGGGGACCATTCCCACATTGG 1939  
 Db 873 CTTCAAATC-GGGCAC--GGGTAATGGAG-----GTAT-  
 AGAAGTCGATTCTTCAT--- 826  
 Qy 1940  
 GGGATCCTGAGGGAGCCCCATCACCGCCTCTTGATACAACTGTCCACTAGGAGGCACGCC 1999  
 Db 825 -----AGAGAGAATCGATCTC-----AATACTGGCC---  
 TGGGTGC----- 793  
 Qy 2000  
 CAGTGTGGGAGAGATGTATGGTCTTGCCCTCCACCTGTAAAACTGCACATATGCAAGCC 2059  
 Db 792 -----TGGAAGAGA-----GGGTACGCTTAGCACGTTTACAAGCAGTACGGAGGC--  
 GTC 745  
 Qy 2060 ATT-  
 TGCACTCTGGAAGTGCATGCCGTGAAAACTCTAATGGTGTGGAAGTCTAGTTTGAA 2118  
 Db 744 TTACAGCTCTCTTGTCTCTACTGATGT----CCTTCTTAT-----  
 GCTTGC 702  
 Qy 2119 TTTGAAATCACGCCGATGCACAAAGGGACAGGCC---  
 CAGGCCCCGACCTCAGGTCATCC 2175  
 Db 701 CTTAAACTCA----GCA---ATAAAATGGTTGACCATTCGG--  
 TTGTCAAAATCTTCTCC 651  
 Qy 2176 GCCCCG-TGGCTGCAGAGCATCC--  
 CTGGGAGCCAAGGCGAGGCCCGTGGAGCCTGAGCT 2232  
 Db 650 ACCCAAGTGG-----GTGTCTCCAGCT-GTAGACTTGAC----CTCAAAGATTG----  
 CA 605  
 Qy 2233  
 TTGTGTAGCTCGAGCTTTGTGTAGCTCGTGCACCTTATTATGCACCACCTCCCTTCAGTCA 2292  
 Db 604 TC-----CTCAA---TAGTGAGGATTG-ACACATCAAAAGTGCCACCTCCC--  
 AGGTCA 557  
 Qy 2293 C-----CACTCTCTTCTCTCCGCCATCTCATT---TATACTGATTGCA----  
 CACCC 2338  
 Db 556  
 AAGATGAGCACGTTTCTTTCTGCTCCAACCTTTTTGTCTAAGCCGTAAGCAATAGCAGCA 497  
 Qy 2339 CCC----  
 GCTCAAACAACAATGTCTTATTATGATGACCATCTCGTAGTGGTACATTC-- 2392

Db 496 GCAGTTGGCTCATTAATAATTCTAAGTACATTGA-GACCAGC----  
AATAGTTCCAGCAT 442

Qy 2393 CATT-----CC-----TATTTAAGGTAA----GCCCAAAGCCCACT--  
TTTGG 2429

Db 441  
CTTTGGTAGCCTGACGCTGAGAGTCATTAAAGTAAGCTGGCACTGTGACCACAGCATTGG 382

Qy 2430  
ATTTTCTCGACTGTCCGAGAAAAGTTGTGTAAGCGCCTGCGTTCTTCTGGGTTTGGCT-A 2488

Db 381 ---TAACAGTCTTCCCAAGGTAGGCT---TCTGCAATTTCTTCATC----  
TTTGTCAGA 332

Qy 2489 GATAGGGTTGTGTCCCTCTATGGAATGGAGAGTGATGTGGGCAAGGGTGTCAATTT--  
TCT 2546

Db 331 ACCATAGAAGACACCTCCTCTGGATAGAAG-----  
CTTTTGGTCT 292

Qy 2547 CGCAC---AATACAACT---  
CACTGAGGATGCTTCTGTAGAAGTGAGAAACACGATGAG 2599

Db 291 CTCCCTTGATTCTACTTGGACCTTGGGCCTGC--CAGCATCATT---  
CACCAC----- 243

Qy 2600 TACATTGAGAATTACAATAACTCA-CTCTCACTGGGTAACCTTC-  
TCATGATAGATTTGTA 2657

Db 242 --CATAAAGGG--  
CCAATGTTTTCATATCAGACTGGACAACAGCATCATCAAATCTGCGTC 187

Qy 2658 TGATCAATACGGGTCTATTTTTATGTCAACTGAACACT-----  
GTAGGGTACCTTCCAG 2711

Db 186 CAATCAG-ACG-----TTTGGCATC-  
AAAACTGTGTTGGTGGGGTTCATTGC-- 141

Qy 2712  
TCTTTTTCAAGATTGTTAAATTGAGACAAGTAATTGAATAATTTGTCCTATTTTTATTTT 2771

Db 140 -----AACTTGATTCTTTGCGGCA--TCACCGATCAA-----CC--  
GTTCAGTGTC 99

Qy 2772 AAAAAAGTGA-ATGGACTGAAAT-  
GTTAAATGTGAATGTACATTTCTTAATTGCAATTT 2829

Db 98 CGTAAAGGCGACATAGCTTGGAGTGGTTTCGGTTTCCCTGATCAT-----  
TGGCAATTA 46

Qy 2830 T-TCTACTGAGTGTGTTGCACTATACTTTCTGGAATCTTATTTAACAAAAATAAAGGG  
2885

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          | | | | |          | | | | | | | | |          | | | | | | | |
Db      45 TCTCGACT-----TTTCCGTGCTGGAAAACACCCACACAAGACCAGTAGG
1

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RESULT 13

US-10-478-914-17

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; Sequence 17, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 17
; LENGTH: 2198
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-17

```

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Query Match          29.4%; Score 5066.5; DB 1; Length 2198;
Best Local Similarity 43.0%; Pred. No. 0;
Matches 1271; Conservative 0; Mismatches 845; Indels 843;
Gaps 166;

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Qy      16
CAGGCCGGGCGCAGTGGCTCATGCCTGTAAGCCCAGCACTTTGGGAGGCGGAGGCGGGTG 75
          | | | | | | | | | | | | | | | | | | | | | |
Db      1 CCTACTGGTC-TTGTG-----TGGGTGTTT-TCCAGCAC-----
GGAAAAGTCGAGAT 46

```

```

Qy      76 GAT--
CCATTGAGGTCAGGAGCTCAAGACCAGCCTGGTCAACATGGTGAAACCCCGTCTC 133
          | | | | | | | | | | | | | | | | | | | | | |
|
Db      47 AATTGCCAATGA--TCAGGGAAACCGAACCA-----CTCCAAG-----
CTATGTCGC 91

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```

Qy      134 TACTAAAAATACAAAAAAAAAATTAGCTGGGCGTGTTGG-
CGGGAGCCTGTAGTCCCAGC 192
          | | | | | | | | | | | | | | | | | | | | | |
Db      92 --CTTTACGGACA-----CTGAACG-GTTGATCGG-----
TGATGCCGCAA 130

```

```

Qy      193
TACACGGGAGGCTAAGGTGGGAGAATTGCTTGAACCCGGGAGGCGGAGGTTGCAGTGAGC 252
          | | | | | | | | | | | | | | | | | | | | | |
Db      131 GAATCAAGTTGCAA-----
TGAACCCACCAACACAGTTTTTGTATG--- 171

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Qy      253 TGAGATTGCACCATTTGCACTCCAGCCTGGGCGACAGAGC--

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Db 585 TCAA--TCCTCACTATTGAGGATGGAATCTTTGAGGTCAAGT-CTAC--AGCT---  
GGAG 636

Qy 840 ACATCTGCAAGATTTGTGTTGGTTTTGATGGAGAACTCTAGCTCATCCA----  
CATGCT- 894  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 637 ACACCCACTTGGGTGGAGAAGATTTTGA---  
CAACCGAATGGTCAACCATTTTATTGCTG 693

Qy 895 AGT----GCCCAAGTGGTGGAGGGGCCACCTCAGCAGGTGGGTTC-  
TGAATGCAGCCAAG 949  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 694 AGTTTAAGCGCAAGCATAAGAAGG---ACATCA----GTGAGAACAAGAGAGCTG-  
TAAG 745

Qy 950  
GCTGTCCCCGCAATGGGTGAGACTCGCTCCAAGTCCCGCCCTCAGAGCAGGTGCCTAAG 1009  
| | | | | | | | | | | | | | | | | | | | | |  
Db 746 AC-GCCTCCGTACTGCTTGTGA-ACGTGCTAA--  
GCGTACCCTC----- 785

Qy 1010 TCCTCCCTGGCACTGGCAGGCCTTACCTCACATTGCTAAATTAAAGCAATGCAATTC-  
CT 1068  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 786 TCTTCC--AGCACC--CAGGCC-----AGTATTGAGAT-  
CGATTCTCT 823

Qy 1069  
CTTGGGTAAGAGGAATTCCTCCTTCTTTACTAACTGATCCCCAGCAAGGAAATAAAATGT 1128  
| | | | | | | | | | | | | | | | | | | | | |  
Db 824 CTATG----AAGGAAT--  
CGACTTCTATACCTCCATTACCCGTGCC----- 864

Qy 1129  
TAGGCTTTAAAAATCCCTACTTTGTCATATCAGACTATATTCTAAACTATATTTGAGCG 1188  
| | | | | | | | | | | | | | | | | | | | | |  
Db 865 ---GATTGAAGA-----  
ACTGAATGCT----- 884

Qy 1189 AAACCTGT--  
CATTGCGTCTAATTTCAAATATACAGAATCTCCTTAAGAGCTGTTGCCTT 1246  
| | | | | | | | | | | | | | | | | | | | | |  
Db 885 -GACCTGTTCCGTGGCACCCCTGGACCCAGTAG--AGAAAGCCCTTCG----  
AGATGCCAA 937

Qy 1247  
ATTTTTTTGTAAAGCCTCTCTGACATCAAATGGGGAGAAATGGTGGCACCTCCAGACACC 1306  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 938 A----  
CTAGACAAGTCACAGATTATGATATTGTCCTGGTTGGTGGTTCTACTCGTATCC 993

Qy 1307  
CTGAAACTACACACCATTTCTTCCCTGCTCAGCTTCTGCTCAGGAGTTCTGTGAGCTATG 1366  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 994 C-----CAAGATT-----CAG--AAGCTTCT--CCAAGACTTCT-----

TCAATG 1029

Qy 1367  
GGAAGGCCATTGGTTGTATTTGCTACTTTTACTTTTCATCTTCCTCTGCTGTAGAGCCATT 1426  
| | | | | | | | | | | | | | | | | |  
Db 1030 GAAAAGAAC-----TGAATAAG-----AGCATCAACC-  
CTGATGAAGC----- 1066

Qy 1427 TAATGTTATTGTCATATGCTGCTGGTGAGGTAAAGGTGGGTCCGGG-TGCCTTC---  
CCA 1482

| | | | | | | | | | | | | | | | | |

|

Db 1067 -----TGTTG-CTTATGGTGCAGCT-----  
GTCCAGGCAGCCATCTTGTCT 1106

Qy 1483 GG-----  
GGTTAGAGGATGTTCAAAGGGCCGATTTTCAGCAGGAGTTCAGAGGGCTTATGA 1537

| | | | | | | | | | | | | | | | | |  
Db 1107 GGAGACAAGTCTGAGAATGTTCAA-----GATTT-----  
GCTGCTCT 1143

Qy 1538  
TGGATGGTGAGAGATTTGACAACCACCAGAGCACATGTGCTCTGACCCTCTCCTGGGCAT 1597

| | | | | | | | | | | | | | | | | |

||  
Db 1144 TGGATG-----TCAC-----TCCTCTTTCCTT-----  
GGTAT 1171

Qy 1598 TGGTTCCTGCTGGTACCGGGCGGTTCA-GAC---  
CTTCAAATAGGTTGCTTTCAAAGAG 1653

| | | | | | | | | | | | | | | | | |  
Db 1172 T-GAAACTGCTGGT---GGAG--  
TCATGACTGTCCTCATCAAGCGTAATACCACCATT 1224

Qy 1654  
CTTTCAGGCACTTATTGAGAATTAATGTTTAAACAGACATAATAGCCTAGATGAACTCCC 1713

| | | | | | | | | | | | | | | | | |

Db 1225 CTACCAAGCAGACACAGACCTTCACTACCTATTCTGACA-ACCAGCCT-  
GGTGTGCTTAT 1282

Qy 1714 AAGAGATCTATTAAATCTTGTGGGC--  
TGAATAAATATCTCGTGCAGGACTGTGCAACAG 1771

| | | | | | | | | | | | | | | | | |

Db 1283 TC-AGGTTTATGAAGGCGAGCGTGCCATGACAAAGGATAACAACCTG--  
CTTGGCAAGTT 1339

Qy 1772 TAG---  
CCCAGAGCATCCTGCCTGTGGGCATCCACCTCCCAGGTGAGGGCAGTGGGAAGC 1828

| | | | | | | | | | | | | | | | | |

|

Db 1340 TGAAGTCACAG-GCATACCTCCTG-----CACC-CCGAGGTGT--  
TCCTCAGATTGA 1387

Qy 1829 TGGCCC----GACG--GCAGCCAGAACTTGT-TTCTCACC-  
TCCCACCAGCAACCCCCCA 1880

| | | | | | | | | | | | | | | | | |

|

Db 1388 AGTCACTTTTGACATTGATGCC---  
AATGGTATACTCAATGTCTCTGCTGTGG-----A 1438

Qy 1881 CCCAACTCTGGGCCCCAGGCACACGA-----  
AGCACAAAGTCTCAGGGGACCATTCCCACA 1935  
||  
Db 1439 CAAGAGTACGGGAAAAGAGAACAAGATTACTATCTACTAATGACAAGGG-  
CCGTTTGAGCA 1497  
Qy 1936  
TTGGGGGATCCTGAGGGAGCCCATCACCGCCTCTTGCATACAACGTGCCACTAGGAGGCA 1995  
||  
Db 1498 -----  
AGGAAGACATTGAACGTATGGTCCAGGAAGCTGAGAAGTACAAAGC- 1543  
Qy 1996 CGCCCAGTGTGGGAGAGATGT--  
ATGGTCTTGCCCTCCACCTGTAAAAACTGCACATATG 2053  
|| | | ||| | | | | | | | | | | | | | | | |  
Db 1544 -----TGAAGATGAGAAGCAGAGGGACAAGGTGTCATCC----  
AAGAATTCACCT--- 1589  
Qy 2054 CAAGCCATTTGCACTCTGGAAC-  
TGCATGCCGTGAAAACTCCTAATGGTGTGGAACCT-- 2110  
|| | | ||| | | | | | | | | | | | | | | | |  
Db 1590 -GAGTCCTATGCCCTTC---AACATGAAAGC-----  
AACTGTTGAAGATGAGAAACTTCA 1639  
Qy 2111 -----  
AGTTTGAATTTGAAATCACGCCGCATGCACAAAGGGACAGGCCCAGGCCCCGACCT 2165  
|| | | | ||| | | | | | | | | | | | | | |  
|  
Db 1640 AGGCAAGATTAACGATGAGGACAAACAG-----AAGATTCTGGACAAG---  
TGTAAT 1688  
Qy 2166  
CAGGTCATCCGCCCCGTGGCTGCAGAGCATCCCTGGGAGCCAAGGCGAGGCCCCGTGGAGC 2225  
| | | | | | | | | | | | | | | | | | | | |  
Db 1689 GAAATTATCAACTGGCT---TGATAAGAATC-----AGACT--  
GCTGAGAAGGAAGAAT 1737  
Qy 2226  
CTGAGCTTTGTGTAGCTCGAGCTTTGTGTAGCTCGTGCACCTTATTATGCACCACCTCCCT 2285  
||| | | | | | | | | | | | | | | | | | |  
|||  
Db 1738 TTGAACATC-AACAGAAAGAGC----TGGAGAAAG-----TTTGCAAC----  
CCCA 1779  
Qy 2286  
TCAGTCACCACTCCTCTTCTCCGCCATCCTCATTTATACTGATTGCACACCCCCCGCTC 2345  
||| ||||| | | | | | | | | | | | | | | | |  
Db 1780 TCA-TCACCAAG-CTGTACCAGAG-----  
TGCAGGAGGCATGCC----- 1816  
Qy 2346  
AAACAACAATGTCTTATTATGATGACCATCTCGTAGTGGTACATTCCATTTCCTATTTAA 2405  
| | | |||| || | | | | | | | | | | | | | | |  
Db 1817 -AGGAGGAATG-CCT-----GGGGGATTTCCTGGTGGTGGAGC-----  
TCCT----- 1856  
Qy 2406  
GGTAAGCCCAAAGCCCACTTTTGGATTTTCTCGACTGTCCGAGAAAAGTTGTGTAAAGCGC 2465

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                                     ||| || |||
Db      1857 -----
CCCTCTGGTGG----- 1867

Qy      2466
CTGCGTTCTTCTGGGTTTGGCTAGATAGGGTTGTGTCCCTCTATGGAATGGAGAGTGATG 2525
          ||| ||| || |||                ||| | || ||| |||
||||
Db      1868 -TGC-TTCCTCAGG-----CCCACCATTGAA--
GAGGTTGAT- 1901

Qy      2526
TGGGCAAGGGTGTTCATTTTCTCGCACAACTCACTGAGGATGCTTCTGTAGAAGTG 2585
          | ||                ||| | || ||| ||||| |
||
Db      1902 TAAGC-----CAACCAAGTGTAGA-----
TGTAGCATTG 1930

Qy      2586
AGAAACACGATGAGTACATTGAGATTACAATAACTCACTCTCACTGGGTAACTTCTCAT 2645
          |||| | | |||| ||| || | || ||| | || ||||
|
Db      1931 TTCCACACATTTAAACATT-TGAAGGACCTAAATTCGT-----AGCAAATTCT-
GT 1980

Qy      2646
GATAGATTTGTATGATCAATACGGGTCTATTTTATGTCAACTGAACACTGTAGGGTACC 2705
          | || ||| | | || | | ||| | || || |||| |
|
Db      1981 GGCAGTTTTTAAAAGTTAA-GCTG--CTA-TAGTAAGT-TACTGGGCA-----
TTC- 2026

Qy      2706 TTCCAGTCTTTTTCAAGATTGTTAAATTGAGACAAGTAATTGAA--
TAATTTGTCCTATT 2763
          || | ||| || || | | || ||| | | ||| | ||| ||
Db      2027 -TCAATACTTG---AATATGGAACATATGC-
ACAGGGGAAGGAAATAACATTGCACT--- 2078

Qy      2764
TTTATTTTAAAAAAGTGAATGGACTGAAATGTTAAATGTGAATGTACATTTCTTAATTG 2823
          || ||||                |||| | ||| | | |||| | || |||||
|
Db      2079 ----TTATAAAC-----ACTGTATTGTAAGTGGAAAATGCA-
ATGTCTTAAATA 2122

Qy      2824
CAATTTTCTACTGAGTGTTTGCCTATACTTTCTGGAATCTTATTTAACAAAAATAAAG 2883
          ||      ||| | | || |||| |||                || | || ||||
|||
Db      2123 AAA-----CTATTTAAAATTGGCACCATA-----
AAAAAAAAAAAAAAAAAAAAAAAAA 2170

Qy      2884 GGAAAAAATTGCTTGA-CT 2901
          || | | |||| || ||
Db      2171 GGCCACATGTGCTCGAGCT 2189

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RESULT 14  
 US-10-478-914-57  
 ; Sequence 57, Application US/10478914

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; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 57
; LENGTH: 2336
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-57
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Query Match          29.4%; Score 5053; DB 1; Length 2336;
Best Local Similarity 42.6%; Pred. No. 0;
Matches 1300; Conservative 0; Mismatches 869; Indels 886;
Gaps 178;
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Qy          2 TGAAATCAGGAAATCAGGCCGGGCGCAGTGGCTCATGC-CTGTAAGCC--
CAGCACTTTG 58
      | | | | |      | | | | | | | | | | | | | | | |
```

```
Db          12 TTACTTCTGCTCTAAAAGCT--
CGCGAATTCCTCGAGCACTGTTGGCCTACTGGAATGCG 69
```

```
Qy          59 GGAGGCGGAGGCGGGTGGATCCATTGAGGTCAGGAGC---TCAAGACC-
AGCCTGGTCAA 114
      | | | | | | | | | | | | | | | | | | | | | |
```

```
Db          70 AGCTGAGCAGACAG--
GGCTGCAAGGAAATCTGGCGCGGTTCAATACCTCGTCTAGCC-- 125
```

```
Qy          115
CATGGTGAAACCCCGTCTCTACTAAAAATACAAAAAAAAAATTAGCTGGGCGTGTGGCG 174
      | | | | | | | | | | | | | | | | | | | | | |
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```
Db          126 -----TGGGTTCCAGTATCTAATTTTTTTT-----TTTGTTTTAAC-----
TGAC- 164
```

```
Qy          175
GGAGCCTGTAGTCCCAGCTACACGGGAGGCTAAGGTGGGAGAATTGCTTGAACCCGGGAG 234
      | | | | | | | | | | | | | | | | | | | | | |
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```
Db          165 --AAACTCATTTCTCTAC-----TGGGA-----
CAGGAT 191
```

```
Qy          235
GCGGAGGTTGCAGTGAGCTGAGATTGCACCATTCAGCTCCAGCCTGGGCGACAGAGCAAG 294
      | | | | | | | | | | | | | | | | | | | | | |
```

```
Db          192 GCTG---TGCTG---GCTGGAA--GTTCCATT--TCTAC-----
AGCAAG 226
```

```

Qy          295
ACTCTCTCAAAAAAAAAAAAAAGAAAGAAAGAAATCAGAAAATCGACCACAGTGGTAGC 354
      | |||
|
Db          227 AATC-CT-----ATCTGGAAA-----
CACAGAAGTTGT 253

Qy          355 CACCTGGCCTAA--TGCT-GTGTTTTTGTACCTGACAGGGGTCACT-
CATTTTAGGCACA 410
      | |||| | ||| | |||| | || | || | || |
||
Db          254 CCTCTAGCCACAGCAGCTCGAACTTTTTTGATTGTC----GTTGCTGCTTTCT---
CCCA 306

Qy          411
ACTCCTTCATTCTTTGTGAAATTAGTGAGTTTCCTTCTACCCGTCACCAGATTCAATATG 470
      | || ||| | |||| | || | ||| |||
Db          307 TCACCCCATCC-----CCTTTTGAC-----
AAAGATCCAA----- 337

Qy          471 TTCTATTAATACAC---CGATAACCACAGGGGAAGGGC-ACTTGTC-
GCTCTCCCACCTG 525
      || ||| | || |||| | || | || | || | |||
|
Db          338 --CTGTAAAAAGTCTTACG-TAAC----AGTTCAGGACTACT--
TCGGTTCTTTTACTGG 388

Qy          526 GTTACCACAGTCTCCATGGGTCTTTTGCCGTGACCACAAATAAAG---
GAAACACT----- 578
      || | ||| || | | |||| | | || | || | |||
Db          389
GTAAGCACTTTCAATTTTTTTTTTTTAACTAAAAGCCATTTTAAAATTGAATCTGTTGAG 448

Qy          579 ---CATCACTAGTATCTAAGTCGGGCTTTACAGTAACTATGCACCTTCTGTG---
TGCTT 632
      | | |||| |||| | ||| |||| | || |||| |
||
Db          449 GGGCTTGACTAAAATCTTTTAAAGTAATTTG-
TGTAATGGAATACTGTCAGTGGATTTTTT 507

Qy          633
CACCTCACTCTCTACTTCAAACAGCCCATGGAGGGAGGTATTATTATACTCCTTATGTTG 692
      | |||| | || | || | |||| | ||||
||||
Db          508 CGTCTCATT-----TCTGCACGTG-----CTCCTT-
TGTTT 537

Qy          693 ACAGTGAAGAATCT-----GAGGCCCAGA--
GAGGTTGGGGACTTGAGTAAAGTCAC 742
      ||| |||| || |||| | | |||| || |||| |
|
Db          538 TCAGAACAGAAGCTTTTTTATACACATCCCATAACGCAGCTGGAGA---GAGTTATG-
AAG 593

Qy          743 ACAGCCCTGAGAGGCAGGACCAGGGTTCCATTCTGCTCTATCCAGTTCCA-----
AGCC 797
      ||| | || | || || | |||| | |||| ||| | || |
Db          594 TCAGTTATTATAAGGAACACAAAGGTTGCTTTCC-
ATTCTTTTGCCTTTAGATAATTAATT 652

```

Qy 798 CTTGTGTTTTCCATTATGTTTAGTGCTCTTTGCTAACAGCA-  
ACATCTGCAAGATTG-- 855  
| | | | | | | | | | | | | | | | | | | | | |  
Db 653 TTTTGTTC---TTAAATGGAG--  
TATTTAAGAAGGAAGAAATTCACAAGAAATAA 707

Qy 856 --TGTTGGTTTTGATGGAGAACTCT--AGCTCAT-  
CCACATGCTAGTGCCCCAGTGGTGG 910  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 708 ACTGTTGGAGAATTTAGAAAAGTTTGAAGTTTTTACCACCTTTTCTATCTCTAGT-  
TTTG 766

Qy 911  
AGGGGCCACCTCAGCAGGTGGTCTGAATGCAGCCAAGGCTGTCCCCGCAATGGG---T 967  
| | | | | | | | | | | | | | | | | | | | | |  
Db 767 TGtGGCCA----AACACTTG-----TGCCGCTGGG-----  
GCGGTGGGGGTA 805

Qy 968 GAGACTCGCTCCAACCTGCCC GCCCTCAGAGCAGGTGCCTAAGTCCTCCCTGG-  
CACTGGC 1026  
| | | | | | | | | | | | | | | | | | | | | |  
|||  
Db 806 GAGGCAAGCATAGACAG-----AGAGGA-----  
ACTAAGCCAGACATGGACAAAGGC 852

Qy 1027 A--GGCC-TTACCTCACATTGCTAAATTAAAGCAATGCAATT--CCT-CT-  
TGGGTAAG-- 1078  
| | | | | | | | | | | | | | | | | | | | | |  
||  
Db 853 ACGAGCCAAAACCAGACAGTCCT-----  
GGCCGTTCGATAGGCCAGCAGTGGGTGAGA 905

Qy 1079 -AGGAATTCCTCCTTCTTTACTAACTGATCC-----CCAGCAAGGAAAT-  
AAAAATGTT 1129  
| | | | | | | | | | | | | | | | | | | | | |  
|||  
Db 906 CAGG---  
TCAGCCAGCTGCAGGGGCGGGAGCGGGGGGGCGGGTAGGGACATGGATGTGTG 962

Qy 1130 AG--GCTTTAAAAATCCCTACTTTGTCATATC-  
AGACTATATTCTAAACTATATTTGAG 1186  
| | | | | | | | | | | | | | | | | | | | | |  
Db 963 AGGTGCT-----CATGC---  
GTGCGATCGTACTAGATTCTGAACT----- 1001

Qy 1187  
CGAAACCTGTCATTGCGTCTAATTTCAAATATACAGAATCTCCTTAAGAGCTGTTGCCTT 1246  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1002 ----GCCAGCCAT-----TTTC-----CCAG---CTCC-----  
GC--- 1024

Qy 1247  
ATTTTTTTGTAAAGCCTCTCTGACATCAAATGGGGAGAAATGGTGGCACCTCCAGACACC 1306  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1025 -----TTTG-----TGCAATCTAAAGG-----AATG-----CATC-----  
CCCT 1053

Qy 1307



```

CTGAAACTACACACCAATTTCTTCCCTGCTCAGCTTCTGCTCAGGAGTTCTGTGAGCTATG 1366
      ||||| |               ||||| | |   ||         ||           |||||
|
Db          1054 CTGAAGCAG-----TCTTGCCAG---AGC-----CT-----
AGTGAG----G 1083

Qy          1367 GGAAGGCCATTGGTTGTATTTGCTACTTTTACTTTTCATCTTCCTCTGC-
TG TAGAGCCAT 1425
      |  |       |||                |  | | | | | | | | |

||
Db          1084 GAGAGAAGTATGGT-----
AAATACCACAACATATGGAATCA- 1120

Qy          1426
TTAATGTTATTGT CATATGCTGCTGGTGAGGTAAAGGTGGGTCCGGGTGCCTTCCCAGGG 1485
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Db          1121 -----GAAAAATACCG---GGA ACTGGAGTGGGCAAGGGG-----
GAATGC----- 1157

Qy          1486
GTTAGAGGATGTTCAAAGGGCCGATTT CAGCAGGAGTTCAGAGGGCTTATGATGGATGGT 1545
      ||||| |||        ||         ||| |     | | | | |         ||| |

|
Db          1158 ---AGAGGGTGT-----GGAAATTTTTTA----GTGATCTGG-----AATG--
TGTT 1195

Qy          1546 GAGAGATTTGACAACCACCAGAGCACATGTGCTCTGACC--
CTCTCCTGGGCATTGGTTC 1603
      ||| ||    ||        | ||| |||    |   | |   ||| ||| || | || | |

|
Db          1196 GAGTGACAGGAAGTGCCCCA-AGCTTCT---CCCCACCAACTCTTCT---
CAGTCGCGC 1248

Qy          1604
CTGCTGGTACCGGGCGGTT CAGACCTTCAAATAGGTTGCTTTCAAAGAGCTTT CAGGCA 1663
      ||||| | | | | | | | | | | | | | | | | | | | | | | | | | |

Db          1249 CTGCTTTTGTCTAACTCTTGTAATCTACACACT-ACTGCTTACAA---
AGCTGTCTG--- 1301

Qy          1664 CTTATTGAGAATTAATGTTTAAACAGACATAA--
TAGCCTAGATGAACTCCCAAGAGATC 1721
                        |||||   ||||| ||   | |||| | |   ||||

Db          1302 -----AGTTTA---AGACAAAAGAAACCTAAAAG-TCTCCTT----
ACT 1338

Qy          1722
TATTAAATCTTGTGGGCTGAATAAAATATCTCGTGCAGGACTGTGCAACAGTAGCCCAGAG 1781
      |  | |   | ||| | |         | | ||| |||   ||   |  ||

Db          1339 TCATAGTACCTGTGATATG-----
GAAGGAATGTAAAGCATGACC----- 1379

Qy          1782
CATCCTGCCTGTGGGCATCCACCTCCCAGGTGAGGGCAGTGGGAAGCTGGCCCCGACGGCA 1841
      | |   |||| ||| |||        | |||||   ||| | ||| |

Db          1380 CTTTAAGCCTATGGACAT---TTTTTCAGGTAT--
ACAGGAGAAAAGAT----- 1422

Qy          1842
GCCAGAACTTGTTTCTCACCTCCCACCAGCAACCCCCCACCCA AACTCTGGGCCCCAGGCA 1901
      || |   |||                |||| ||   ||   ||

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Db 1423 ----AAAATAATTT-----TCCACAGAAAAATG-----  
AGAAT 1451

Qy 1902 CACGAAGCACAAAGTCTCAGGGGACCATTCCCACATT--  
GGGGGATCCTGAGGGAGCCCAT 1959  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1452 TATGAATTATATAGTTTTCAGGTTCCAAATCTAATTTTTTAAAGAATTCTGA-----  
TT 1503

Qy 1960  
CACCGCCTCTTGCATACAACCTGTCCACTAGGAGGCACGCCCAGTGTGGGAGAGATGTATG 2019  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1504 CTGCTACACTT---TACAAATG--CTTAGGTTGGTT--  
CCTAATTTGAAGGAG----- 1549

Qy 2020  
GTCTTGCCTTCCACCTGTAAAACTGCACATATGCAAGCCATTTGCACTCTGGAAGTCA 2079  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1550 -----ACTTGTTTTATTTGGTTA-  
ATGCATTGCATTTGAACT----- 1585

Qy 2080  
TGCCGTGAAAACCTCTAATGGTGTGGAACCTAGTTTGAATTTGAAATCACGCCGCATGCA 2139  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1586 -----TGT-----TTCTATT-----  
TTCTTTGCATAAATTTGG-----A 1614

Qy 2140  
CAAAGGGACAGGCCCAGGCCCCGACCTCAGGTCATCCGCCCCTGGCTGCAGAGCATCCCT 2199  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1615 CTTTGGG--AGAAAAATGC-----AAAGTAAT---AAGTAGAATGCA-----  
CTT 1654

Qy 2200 GGGAGCCAAGGCGAGG-----CCCGTGGAGCCTGAGCTTTGTGTAG----  
CTCAGACTT 2249  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1655 GGGGGAAAAAGGAGGATTTTTCCCTT----CATGGG--  
TTGGAAAGTATTTTAAAGGGT 1708

Qy 2250 TGTGTAGCTCGTGCACCTTATTATGCAC-CACCTCCCTTCAGTCACCACTCCT-----  
CT 2302  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1709 TGTTT---TCTTG-AAAAACAAGCTCTCTCTTACTTTCTG-  
CATCTATGCTATAAAGAT 1763

Qy 2303 TCCTCCGCCATCCTCATTTTATACTGATTGCACAC-  
CCCCCGCTCAAACAACAATGTCCTT 2361  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1764 AACTATGCTATAATAAATGTAA--  
GGTAGAAAACCTTTAAAGAGAAAATAACAGTGTTCTA 1821

Qy 2362  
ATTATGATGACCATCTCGTAGTGGTACATTCCATTCTATTTAAGGTAAGCCCAAAGCCC 2421  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 1822 A--GTGAAAAGCTACT-----TAGCATTTTCCCAAAC-----  
CACACATTATCA 1864

Qy 2422 ACTTTTGGATTTTCTCGACTGTCCGAGAAAAG-----  
TTGTGTAAGCGCCTGCGTTC 2473  
|| || || | | ||||| | | || || ||  
||  
Db 1865 AC----  
AGAAACACTAAAAATTAAGAGAAAAGCGGCCAACTAATTAAATAGCTAGCCTTA 1920

Qy 2474 TTCTGGG---  
TTTGGCTAGATAGGGTTGTGTCCCTCTATGGAATGGAGAGTGATGTGGGC 2530  
|| ||| | || ||| | ||| ||| | | |  
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Db 1921 TTTTGGGGGTATGGGATAGAAAATTAAGTGT-----  
GAATAAAATGATACTTGGGA 1971

Qy 2531  
AAGGGTGTCAATTTTCTCGCACAAATACAACCTCACTGAGGATGCTTCTGTAGAAGTGAGAAA 2590  
| | ||||| | | || | ||| ||||| | |||  
|  
Db 1972 ATG-----TTTCTCCCTC-GTAC----CACAAAGGATGTT-----  
AGTGGTCAG 2010

Qy 2591 CACGATGAGTACATTCAGAATTACAATAACTC---ACTCTCA--CTGGGTA-AC----  
TT 2640  
| | | ||| || | | | || | || | | | | |  
||  
Db 2011 C-CTACGAGTTAATCCTTCCTAGC-  
ATGGCTCTGAGCCTTCATGCCGAGCAGACGTTATT 2068

Qy 2641 CTCATGATAGATTTGTATGATCAATACGGGTCT-----  
ATTTTTATGTCAACT 2688  
| |||| | || | | || | | ||| ||  
|||  
Db 2069 CACATGA-  
CGATTCGAAAAGTCCATTCATATATCTCGCTACCTGGATTTGAATAGAAACC 2127

Qy 2689 GAACA-----  
CTGTAGGGTACCTTCCAGTCTTTTTCAAGATTGTTAAATTGAGACAAGT 2742  
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Db 2128 AGACAGCAATTCTTTA--GTTCCAGCCA-  
CCATTCGCCCCACTGGACAATAGCGATTTGT 2184

Qy 2743 AATTGAATAATTTGTCTATTTTTATTTTAAAAAAGTGAATGGA-  
CTGAAATGTTAAAT 2801  
| | | | || | | | | | ||| ||| | | |  
||  
Db 2185 --TAGCACAG--AGTCACA---GGCTGTGGGACACAAAGCTTGGAGCTGCA--  
GAAAGAT 2235

Qy 2802 GTG-----AATGTAC-----ATTTCT---  
TAATTGCAATTTTCTACTGAGTGTTTGCA 2847  
| | | || || | | ||| || |||  
||  
Db 2236 GGGGGATTGAGAGAACAGGAAATTACAGGCTCGATGCA-----CTCCTGG----  
CAGCT 2285

Qy 2848 CTATACTTTCTGGAATCTTATTTAACAAAAATAAAGGGAAAAAATTGCTTGA-CT  
 2901  
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 Db 2286 CTGAGAATACAAAA-----AAAAAAAAAAAAAAAAAGGCCACATGTGCTCGAGCT  
 2335

RESULT 15

US-10-478-914-60/c  
 ; Sequence 60, Application US/10478914  
 ; Patent No. 7335755  
 ; GENERAL INFORMATION:  
 ; APPLICANT: NAKAGAWARA, AKIRA  
 ; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
 ; FILE REFERENCE: 7388-80899  
 ; CURRENT APPLICATION NUMBER: US/10/478,914  
 ; CURRENT FILING DATE: 2003-11-26  
 ; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-162775  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-255226  
 ; PRIOR FILING DATE: 2001-08-24  
 ; NUMBER OF SEQ ID NOS: 417  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 60  
 ; LENGTH: 2022  
 ; TYPE: DNA  
 ; ORGANISM: Homo sapiens  
 US-10-478-914-60

Query Match 28.3%; Score 4867; DB 1; Length 2022;  
 Best Local Similarity 41.7%; Pred. No. 2.5e-298;  
 Matches 1211; Conservative 0; Mismatches 756; Indels 940;  
 Gaps 147;

Qy 8 CAGGAAATCAGGCCGGGCGCA-  
 GTGGCTCATGCCTGTAAAGCCCAGCACTTTGGGAGGCGG 66  
 | | | | | | | | | | | | | | | |  
 |  
 Db 2022 CTG-----CAGCTCGAGCACATGTG-----  
 GCCTTTTTTTTTTTTTTTTTTAGATGGAGT 1974

Qy 67 AGGCGGGTGGATCCATTGAGGTCAGGAGCTCAAGACCAGCCTGGTCAAC-  
 ATGGTGAAAC 125  
 | | | | | | | | | | | | | | | |  
 |  
 Db 1973 T-----TTGCTCTTTT-----  
 GCCCAGGCTGGAGTGCAATGGCGCGAT 1936

Qy 126  
 CCCGTCTCTACTAAAAATACAAAAAATTAGCTGGGCGTGTGGCGGGAGCCTGTAG 185  
 | | | | | | | | | | | | | | | |  
 |  
 Db 1935 CTCGGCTC-ACTGCAACTTCCGCCTC-----CTGG-----  
 GTTCAAGCTATTCTCCTG 1889

Qy 186 TCCCAGCTACACGGGAGGCTAAGT-----  
 GGGAGAATTGCTTGAACCCGG 231  
 | | | | | | | | | | | | | | | |

Db 1888  
CCTCAGCCCTCCTGAGTAGCTGAGGTGAGAGGACTGACGCGAGAGGATTGCTTGAGCCTAG 1829

Qy 232  
GAGGCGGAGGTTGCAGTGAAGTTCAGATTCAGCTCCAGCCTGGGCGACAGAGC 291  
|||| | ||||| ||||| || | | ||| || ||||| ||||| ||||  
|||

Db 1828  
GAGGTTGAGGTTGCAGTGAAGTTCAGCTCCAGGCTGGGTGACAAAGC 1769

Qy 292 AAGACTC--  
TCTCAAAAAAAAAAAAAAGAAAGAAAGAAATCAGAAAATCGACCACAGTG 349  
|||| | ||||| ||||| ||| ||| ||| ||| | |||| | |||

Db 1768  
AAGACCCTGTCTCAAAAACAAAAACAAACAAACAAACAAACAAAAATAACCAACAAAA 1709

Qy 350  
GTAGCCACCTGGCCTAATGCTGTGTTTTGTACCTGACAGGGGTCACCTCATTTTAGGCAC 409  
| | |||| | | | | |||| |||| | |||| | ||||  
||

Db 1708 AAAAC--CCTGAGTTTAAGTTTGATTTTAAGACCTG-----  
TAGGGAC 1668

Qy 410 AACTCCTTCATTCTTTGTGAAATTAGTGAGTTTCCTTCTACCCGTCA-  
CCAGATTCAATA 468  
| | || |||| | ||| ||| ||| | | ||| | | | | |||

Db 1667 AGCAGATTAGTTCT-----  
ACTTTAATGGGTATGCATCATCTGGAAAGCAAGGGTCA--- 1616

Qy 469  
TGTTCTATTAATACACCGATAACCACAGGGGAAGGGCACCTTGTCGCTCTCCACCTGGTT 528  
||| | ||| ||| ||| ||| | ||| ||||  
|

Db 1615 -----TAAAAAGAAGAT----ACA-----TCTT-----CACTGGCACC--  
ATC 1584

Qy 529  
ACCACAGTCTCCATGGGTCTTTTTGCCGTGACCACAAATAAAGGAAACACTCATCACTAGT 588  
|| |||| || | || | ||| ||| ||| |||

Db 1583 ACATCAGTCATCA-----GTCCTTAGATACAG--  
AAC----- 1554

Qy 589  
ATCTAAGTCGGGCTTTACAGTAACTATGCACCTTCTGTGTGCTTCACCTCACTCTCTACT 648  
||||| | | ||| |||| | |||

Db 1553 -----CTTTACTG-----ACTCCCTC--AAACTTC-----  
CATGCTTC- 1522

Qy 649  
TCAAACAGCCCATGGAGGGAGGTATTATTATACTCCTTATGTTGACAGTGAAGAATCTGA 708  
|||| | ||| ||| | ||| ||| |||

Db 1521 -CAAAC TAACCAAGCAG-----TTCTTCT-----  
ACA----- 1496

Qy 709  
GGCCCAGAGAGGTTGGGGACTTGAGTAAAGTCACACAGCCCTGAGAGGCAGGACCAGGGT 768  
|||| | ||| | ||| ||| ||| |||

Db 1495 -----TTGGGATC-----ATCGAATTTCCCT-----TCA-  
TGT 1469

Qy 769  
TCCATTCTGCTCTATCCAGTTCCAAGCCCTTGTGTTTTCCATTATGTTTAGTGCCTCTT 828  
| | | | | | | | | | | | | | | | | | | | | |

Db 1468 TCCAACTCTCCTCTAGC---TTCAATATACACATAGACAACCTTA-----GCC-  
ATC 1421

Qy 829 TGCTAACAGCAACATCTGCAAGATTTGTGT-  
TGGTTTTGATGGAGAACTCTAGCTCATCC 887  
| | | | | | | | | | | | | | | | | | | | | |

Db 1420 TGAAAAC--  
CTACTTTTAGAATATTCCCGAGTGGTTCACGTAAGTCCTCTGCCAGATTC 1363

Qy 888  
ACATGCTAGTGCCCAAGTGGTGGAGGGGCCACCTCAGCAGGTGGGTCTGAATGCAGCCA 947  
| | | | | | | | | | | | | | | | | | | | | |

Db 1362 ACA-----TACCCATAAATT-----CTACTTCA-----  
TAAGCCC 1333

Qy 948 AGGCTGTCCCCGCAATGGGTG-  
AGACTCGCTCCAAGTGGCGCCCTCAGAGCAGGTGCCT 1006  
| | | | | | | | | | | | | | | | | | | | | |

Db 1332  
ATACTGTTCTTAAAAAGAAATAGAAAAATATATCAATATAACTTTAAATAAGACACA 1273

Qy 1007  
AAGTCCTCCCTGGCACTGGCAGGCCTTACCTCACATTGCTAAATTAAAGCAATGCAATTC 1066  
| | | | | | | | | | | | | | | | | | | | | |

Db 1272 AA--CCTTCATGAAAAT-ATAG-----TCATCAAATT--TATTTT----  
CATTGGGATGC 1227

Qy 1067  
CTCTTGGGTAAGAGGAATTCCTCCTTCTTTACTAACTGATCCCCAGCAAGGAAATAAAAT 1126  
| | | | | | | | | | | | | | | | | | | | | |

Db 1226 CATTT---TTTGAAGAATTCCTAAGACTAATGTTTCT--  
TGACATGCAAG-----A 1181

Qy 1127  
GTTAGGCTTTAAAAATCCCTACTTTGTCATATCAGACTATATTCTAAAACTATATTTGAG 1186  
| | | | | | | | | | | | | | | | | | | | | |

Db 1180 GTTA-GCATTAAATAG--CTTACGTT-----ACTATA-  
AATACTGCTGCTTGAAG 1135

Qy 1187 CGAAAC--  
CTGTCAATTGCGTCTAATTTCAAATATACAGAATCTCCTTAAGAGCTGTTGCC 1244  
| | | | | | | | | | | | | | | | | | | | | |

Db 1134 CAGTACAAGTGTGTTTAGAG-----TTTTAAGACTACAGACTTTTCATTA----  
CTCAAATC 1084

Qy 1245 TTATT---TTTTTGTAAGCCTC-----  
TCTGACATCAAATGGGGAGAAATGGTGGC- 1293

||||| | ||||| || ||| | || ||| |||  
||  
Db 1083 TTATTCAGTAAATGTAAA-AATCAGAAGGTTCTG--AACAGCTGGTTAGGAA-  
GGTAGCC 1028

Qy 1294 -ACCTCCAGACACCCTGAAACTAC-ACACCATTCTT-  
CCCTGCTCAGCTTCTGCTCAGG 1350  
| | ||| | || || | | || ||| | || || | ||  
|||  
Db 1027 AAGATGCAGGAAAGATG--TCTGCGCCTCCTTTTCAAGGGCAGC-  
CAACTCTTGAACAGT 971

Qy 1351 AGTTCTGTGAGCTATGGGAAGGCCA-  
TTGGTTGTATTTGCTACTTTTACTTTTCATCTTCC 1409  
|| | || | | ||| ||| | | ||| | || | |||  
|  
Db 970 AG-----GTGCCA--AAATATCCACATGGCCTTTATAGCTTC---  
CACCTGCGTCACAC 922

Qy 1410  
TCTGCTGTAGAGCCATTTAATGTTATTGTCATATGCTGCTGGTGAGGTAAAGGTGGGTCC 1469  
| | | ||||| | ||| |||| ||| |||  
Db 921 ACAAAT----AACAAAGTAATGTAAATGACA-----TGCT--  
TGAAATAA----- 883

Qy 1470  
GGGTGCCTTCCCAGGGGTTAGAGGATGTTCAAAGGGCCGATTTTCAGCAGGAGTTCAGAGG 1529  
||| || | | ||| |||  
Db 882 -----CTTGTC-----  
GCAATACTTTGGCTCAATTATATCA----- 851

Qy 1530  
GCTTATGATGGATGGTGAGAGATTTGACAACCACCAGAGCACATGTGCTCTGACCCTCTC 1589  
||| | |||| | | ||| |||||  
||  
Db 850 -CTT-----TAAACTTTGCTTGCAGCAATA--AAATGT-----  
ACTA 817

Qy 1590  
CTGGGCATTGGTTCTGCTGGTACCGGGCGGTTTCAGACCTTCAAATAGGTTGCTTTCAA 1649  
|||||| | | | |||| ||| | ||||  
|||  
Db 816 CTGGGCAAATTATC-----TCCAGAACTT-----  
TGACTTTAAAA 782

Qy 1650  
AGAGCTTTTCAGGCACTTATTGAGAATTAATGTTTAAACAGACATAATAGCCTAGATGAAC 1709  
| | || | || |||| | || |||  
Db 781 AATG--TTAAATCAATTATT-----  
TCAATATA----- 756

Qy 1710  
TCCCAAGAGATCTATTAAATCTTGTGGGCTGAATAAATATCTCGTGCAGGACTGTGCAAC 1769  
| |||| | | ||| || | ||| ||||  
Db 755 -----AATAAATAAT-TAGGC-----CTCACTAACAG--  
CTGT----- 726

Qy 1770  
AGTAGCCCAGAGCATCCTGCCTGTGGGCATCCACCTCCCAGGTGAGGGCAGTGGGAAGCT 1829  
|||| | || | | || |||

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Db          725  -----CCCAACACCTC-----TAC-
CCACCCT-----T 704

Qy          1830  GGCCCGACGGCAGCCAG---
AACTTGTTTCTCACCTCCCACCAGCAACCCCCCACCCAAC 1886
      ||| ||      || | ||      | ||      ||| ||      ||| |||      | | |
||
Db          703
GGCTCGGAAACAACACTAGTTAGGCCTGAGTCTTACAATTTTTCAGGAACAAGCTAACAAA- 645

Qy          1887  TCTGGGC--
CCCAGGCACACGAAGCACAAGTCTCAGGGGACCATTCCCACATTGGGGGAT 1944
      |||| | ||||| ||| | | | | | ||| |||
Db          644  --AGGGCATCCCAGGCAGAGGAAATAATATGCTGA-----
ATTACCA----- 605

Qy          1945
CCTGAGGGAGCCCATCACCGCCTCTTGCATACAACCTGTCCACTAGGAGGCACGCCCAGTG 2004
      ||||| |      ||| | | | | | | | | | | | | | | | | | | | |
Db          604  CCTGAGTTA---AGTCAAAGGCTTCTGATTCT--TGTTCAAAA-----
TCACCTA--- 559

Qy          2005  TGGGAGAGATGTATGGTCTTGCCTTCCACCTGTAAAAACTGCAC-
ATATGCAAGCCATTT 2063
      |||| | |||| | |||      ||| | | | ||| | |||      |
Db          558  -----TTATGCTCTTG-TTTC-----
TAATAATTCCACAAAATGTTCAACT--- 518

Qy          2064
GCACTCTGGAAC TGCATGCCGTGAAACTCCTAATGGTGTGGAACCTAGTTTGAATTTGA 2123
      |||| | ||| | | | ||| | | | | | ||| |||
|||
Db          517  --ACTCT-----TATGACATTAACACTTCAAGAG--AAAGAGCTAAG-----
CTGA 476

Qy          2124
AATCACGCCGCATGCACAAAGGGACAGGCCAGGCCCGACCTCAGGTCATCCGCCCGCTG 2183
      | | |      ||| |||| | | |      | | | | | | | | | |
Db          475  AGTCT---TTCATTACATAAAGA-----TGACACAATTTAA--
AAAT----- 438

Qy          2184
GCTGCAGAGCATCCCTGGGAGCCAAGGCGAGGCCCGTGGAGCCTGAGCTTTGTGTAGCTC 2243
      ||| || | |      |||      || | | | | |||| | | |
Db          437  GCTACAAGGC-----
AGGTATGGACAAAGTACTATGAGGGTAATAAGGAGG 392

Qy          2244
GAGCTTTGTGTAGCTCGTGCATTATTATGCACCACCTCCCTTCAGTCACCACTCCTCTT 2303
      ||      || | | | | |      || | ||
|||||
Db          391  GA---ATGATTAACACG----CTAAAAAT-----
ATACTCTT 362

Qy          2304  CCTCCGCCATCCTCATTTATACTGATTGCAC-
ACCCCCCGCTCAAACAACAATGTCCTTA 2362
      | ||| | | | | | | | | | | | | | | | | | | | |
Db          361  -----AACCTAA--TGAAATGAAAGTACTGCCTTCC---CAAAC--
CGAAGTTC--- 320

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Qy 2363 TTATGATGACCATCTCGTAGTGGTACA-  
TTCCATTCCCTATTTAAGGTAAGCCCAAAGCCC 2421  
| | ||| ||| | | ||||| ||| |||||

Db 319 -----AAAACAGGTATATTTACATTTAAAATTGTATTTAAAATAA-  
TTCAAAGCTT 270

Qy 2422  
ACTTTTGGATTTTCTCGACTGTCCGAGAAAAGTTGTGTAAGCGCCTGCGTTCTTCTGGGT 2481  
|| | | |

Db 269 AC-----  
CACCAGC----- 261

Qy 2482  
TTGGCTAGATAGGGTTGTGTCCCTCTATGGAATGGAGAGTGATGTGGGCAAGGGTGTCAT 2541  
|| ||| | | | | |

Db 260 -----AG-----CCCTTT-----  
TCTGACCGTAGGTAAC-- 237

Qy 2542  
TTTCTCGACAATACAACCTCACTGAGGATGCTTCTGTAGAAGTGAGAAACACGATGAGTA 2601  
||| | | | | |

|||

Db 236 TTTCCCATCAAATTCATC-CACTG-----  
GTA 211

Qy 2602  
CATTGAGAATTACAATAACTCACTCTCACTGGGTAACCTTCTCATGATAGATTTGTATGAT 2661  
| | | | | | | | | | | |

Db 210 CCTT-----TATATCCGGCTCAACCTGAGAA-----  
ATGGTA----- 179

Qy 2662 CAATACGGGTCTATTTTTATGTC-----  
AACTGAACACTGTAGGGTACCTTCCAGTCT 2714  
| | | | | | | | | | | | | | | |

|

Db 178 CAGTTCAGGTGTTCTTCTATCTCAGATAGTAACTAAGTAATGGAGAGAAAATTTC---  
CA 122

Qy 2715  
TTTTCAAGATTGTTAAATTGAGACAAGTAATTGAATAATTTGTCCTATTTTTATTTTAAA 2774  
| | | | | | | | | | | | | |

|||||

Db 121 AATAAAA----ATTTCAATTTAGA-AAG-AGTTG--TATTTTATCATC-----  
ATTAAA 77

Qy 2775  
AAAAGTGAATGGACTGAAATGTTAAATGTGAATGTACATTTCTTAATTGCAATTTTTTCTA 2834  
| | | | | | | | | | | | | | | |

|

Db 76 TAAAG---CTGGCCAGTAG-GCCAACAGTGCTCGAGGAATTC-----  
CGCAGCTTTTAGA 26

Qy 2835 -CTGAGTGTGTTGCACTATACTTTCTGG 2860  
| | | | | | | | | |

Db 25 GC--AGAAGTAACACT-TCCGTACAGG 2

Search completed: March 9, 2010, 15:51:56  
Job time : 13.4075 secs

OM nucleic - nucleic search, using sw model

Run on: March 9, 2010, 15:51:16 ; Search time 1 Seconds  
 (without alignments)  
 1134.946 Million cell

updates/sec

Title: US-10-572-905-8  
 Perfect score: 19543  
 Sequence: 1 gcggggcgggccggcggcgg.....aaaaaaaaaaaaaaaaaaaaa  
 3056

Scoring table: BLOSUM62  
 Gapop 10.0 , Gapext 0.5

Searched: 417 seqs, 79705 residues

Total number of hits satisfying chosen parameters: 834

Minimum DB seq length: 0  
 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
 Maximum Match 100%  
 Listing first 45 summaries

Database : 7335755.seq:\*

Pred. No. is the number of results predicted by chance to have a  
 score greater than or equal to the score of the result being  
 printed,  
 and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
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1	7203	36.9	3210	1	US-10-478-914-4	Sequence 4,
Appli						
c 2	6879.5	35.2	3210	1	US-10-478-914-4	Sequence 4,
Appli						
3	6611	33.8	3589	1	US-10-478-914-21	Sequence 21,
Appl						
c 4	6319.5	32.3	3589	1	US-10-478-914-21	Sequence 21,
Appl						
5	6214	31.8	2437	1	US-10-478-914-61	Sequence 61,
Appl						
c 6	6092.5	31.2	2437	1	US-10-478-914-61	Sequence 61,
Appl						
7	5788	29.6	2120	1	US-10-478-914-64	Sequence 64,
Appl						
c 8	5725	29.3	2120	1	US-10-478-914-64	Sequence 64,

Appl	c	9	5415.5	27.7	2495	1	US-10-478-914-20	Sequence 20,
Appl	c	10	5339	27.3	2198	1	US-10-478-914-17	Sequence 17,
Appl		11	5283.5	27.0	2495	1	US-10-478-914-20	Sequence 20,
Appl	c	12	5269.5	27.0	2336	1	US-10-478-914-57	Sequence 57,
Appl		13	5207.5	26.6	2198	1	US-10-478-914-17	Sequence 17,
Appl		14	5054	25.9	2336	1	US-10-478-914-57	Sequence 57,
Appl	c	15	4731.5	24.2	2083	1	US-10-478-914-3	Sequence 3,
Appli	c	16	4643	23.8	1946	1	US-10-478-914-62	Sequence 62,
Appl		17	4628	23.7	1946	1	US-10-478-914-62	Sequence 62,
Appl	c	18	4627.5	23.7	2022	1	US-10-478-914-60	Sequence 60,
Appl		19	4489.5	23.0	2083	1	US-10-478-914-3	Sequence 3,
Appli		20	4294.5	22.0	2022	1	US-10-478-914-60	Sequence 60,
Appl	c	21	4115	21.1	1813	1	US-10-478-914-63	Sequence 63,
Appl		22	3967.5	20.3	1813	1	US-10-478-914-63	Sequence 63,
Appl		23	2437.5	12.5	889	1	US-10-478-914-5	Sequence 5,
Appli		24	2387.5	12.2	816	1	US-10-478-914-15	Sequence 15,
Appl	c	25	2375.5	12.2	816	1	US-10-478-914-15	Sequence 15,
Appl		26	2369.5	12.1	867	1	US-10-478-914-6	Sequence 6,
Appli	c	27	2359	12.1	867	1	US-10-478-914-6	Sequence 6,
Appli		28	2351.5	12.0	717	1	US-10-478-914-42	Sequence 42,
Appl	c	29	2289	11.7	889	1	US-10-478-914-5	Sequence 5,
Appli		30	2274	11.6	839	1	US-10-478-914-16	Sequence 16,
Appl		31	2229	11.4	794	1	US-10-478-914-13	Sequence 13,
Appl	c	32	2229	11.4	794	1	US-10-478-914-13	Sequence 13,
Appl	c	33	2208	11.3	1020	1	US-10-478-914-68	Sequence 68,
Appl		34	2204	11.3	816	1	US-10-478-914-38	Sequence 38,
Appl	c	35	2203	11.3	839	1	US-10-478-914-16	Sequence 16,
Appl	c	36	2195.5	11.2	889	1	US-10-478-914-9	Sequence 9,
Appli	c	37	2193.5	11.2	816	1	US-10-478-914-38	Sequence 38,
Appl		38	2175	11.1	1020	1	US-10-478-914-68	Sequence 68,

Appl	39	2171.5	11.1	889	1	US-10-478-914-9	Sequence 9,
Appli	40	2167	11.1	938	1	US-10-478-914-69	Sequence 69,
Appl	c 41	2156.5	11.0	811	1	US-10-478-914-37	Sequence 37,
Appl	c 42	2135	10.9	938	1	US-10-478-914-69	Sequence 69,
Appl	c 43	2126.5	10.9	717	1	US-10-478-914-42	Sequence 42,
Appl	c 44	2098	10.7	820	1	US-10-478-914-39	Sequence 39,
Appl	45	2092	10.7	854	1	US-10-478-914-7	Sequence 7,
Appli							

# ALIGNMENTS

## RESULT 1

US-10-478-914-4

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; Sequence 4, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 4
; LENGTH: 3210
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-4
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Query Match          36.9%; Score 7203; DB 1; Length 3210;
Best Local Similarity 46.1%; Pred. No. 0;
Matches 1625; Conservative 0; Mismatches 1095; Indels 802;
Gaps 225;
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Qy          1 GCGGGGCGGGCCGGC-GGCGGAGGCCGGGC-
CGCGGAGCCAGGAGTGACTAGCAGCAGTT 58
          ||  |  ||||  | |||  ||||  ||  |  ||  ||||  |  ||  |
||
Db          1 GCACTGTTGGCCTACTGGCCCAGGCCTTGCACACG----CAGGTG---CTCTC-----
TT 48
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Qy          59
GGCCGTGCCGTAGCAGCGTCCCGCGCGCGGCGGGCAGCGGCCAGGAGGCGCGTGGTGCG 118
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Db          49 ----AGTGC-----TCCCTGGCAAGGATGG-----GAAGGCAT---
GTTCA 82

Qy          119 GGT TTCGGCGGCGGCTGAGGAAGAAGCGCGGGCGGCGCCTTC-GGGAGGC---
GAGCAGG 174
      |   |   ||   |   ||   |   ||   ||   |   |   ||   ||   |   |   ||   |   |
|
Db          83
GT CCTAGGAGTAGGAAGGGGCAGAGGTGTTGATGGCCCCTACAGAGCGGCCAAGGACAAG 142

Qy          175
CAGCAGTTGGCCGTGCCGTAGCAGCGTCCCCGCGCGCGGGCGGGCAGCGGCCCAGGAGGCGC 234
      |||   |   ||   ||   |   |||   |   |||   ||   |   |   |   ||   |||
|
Db          143 GAGCTGCTGTTTCGAAAC--AGC--CTTCCTGCTCCC--
CAACCTGCCTCCCA-----C 189

Qy          235 GTGGCGGCGCTCGGCCT---
CGCGGCGGCGGCGGCGGCAGCGGCCCAGCAGTTGGCGGCG 291
      |   |   |   ||   |   |   |   ||   |   ||   |   ||   |   ||   |   ||
|
Db          190 CCAACAG-GTTTTGCATATACTCTACTG-GGAAGAGG----GACACACC-----
CGAC- 236

Qy          292
AGCGCGTCTGCGCCTGCGCGGCGGGGCCCCGCGCCCCCTCCTCCCCCCTGGGCGCCCCCGG 351
      ||   |   |||   |||   |   |   |   |||   ||   ||   |||   |   ||   |   |||   |||
|
Db          237 TGCATCACTGC-CCTCCAAGTCTCTCCCTGC-
CCTGTCCAGCATCCAGGAGCACCCCTAG 294

Qy          352 CGGCGTGTAAT-
GGCGGCCTCCGCGGCGGCAGCCTCGGCAGCAGCG----- 397
      |   |   |   |   |   |   ||   |   |||||   ||   |   ||   |
|
Db          295
TTGGGGAAGCTTCTGTGACTCCCCCTACAACAGCCTAGGATGGAGTGGGGTTTGTGAACA 354

Qy          398 ---GCC-TCGGCCGCCT-----CTGGCAG--CCCGGGCCCG-
GGCGAGGGGCTC 438
      ||   |   |||   ||   |   |   |||   ||   |||   |||   |   |||   ||
|
Db          355
AATGCAGAAGGCAGTCTTAGGGAGGTCAGCTGACATGCCCTGGCCTGTGGCTGGGAAGT 414

Qy          439 CGCTGGCGGCGAAAAGCGCTCCACCGCCCCCTTCGGCCGCAGCCTCGGC----
CTCTGCCT 494
      ||   |   |||   ||   |   ||   |   ||||   ||   |   |   |||   ||   |   |||
|
Db          415 AGC-AGAGGC-TAAGGTTCTTCCCCGC----TCTGGGGTTGCC-
AGGAGTAGCACTGGAT 467

Qy          495 CAGCCGCGGCGTCG----TCGCC-CGCGGGGGGCGGCGCC-GAGGC-
GCTGGAGCTGCTG 547
      |||   |   ||   |   |   ||   ||   |   |   ||   |   ||   |||   ||   |||
|
Db          468 CAGTC-AGGTGACAGGGCTCTCCTCTCTCTGAGCAGGTCCGGTGGCAGC-----
CTTCAA 521

Qy          548 GAGCACTGCGGCGTGTGCAGAGAGCGCCTGCGACCCGAGAGGGAGCCC--
CGCCTGCTGC 605
      |   |   |   ||   |||   |   |   |   |   ||   |   |||||   ||   ||   |   ||   ||
|
Db          522 GGTCGCCACGCCGTATTCCCTGTATGTCT--GTCCCCAGGGGCGAGAACGTCACC--

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606 CCTGTTTGCACCTCGG--CCTGTAGTGCCCTGCTTAGGGCCCCGC---GGCCCCCGCC--
GCC 658      | | | |   | | | |   | | | |   | | | |   | | | |   | | | |

|
Db          578 CCTGCAGGCTCTTGGGCCCTGTGG-----
ACAAAGGGCACGATGTGACCTTCTACAAGAC 632

Qy          659 G----
CCAACAGCTCGGGGGACGGCGGGGGCGGCGGGGCGACGGCACCGTGGTGGACTGTCC 714
      |       |   | | | | | | | |   | | | |   | | | |   | | | |

| |
Db          633 GTGGTACCGCAGCTCGAGG---GGCGAGGT-GCAGAC--CTGCTC---
AGAGCGCCCGGCC 683

Qy          715
CGTGTGCAAGCAACAGTGTCTTCTCAAAGACATCGTGGAGAATTATTTTCATGCGTGATAG 774
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Db          684 CATCCGCAACCTCACGT-----TCCAGGACCTTC-----
ACCTGCACCATGG 725

Qy          775
TGGCAGCAAGGCTGCCACCGACGCCCAGGATGCGAACCAGTGTGCTGCTAGCTGTGAGGA 834
      | | |   | | | | | | | |   |   | | | |   | | | |   | | | |

| | |
Db          726 AGGCCACCAGGCTGCCAACACCAGCCACGACCTGGCTCAGCGC--CACGGGCT----
GGA 779

Qy          835 TAATGCC-CCAGCCACCA--
GCTACTGTGTGGAGTGTCTCGGAGCCTCTGTGTGAGACCTG 891
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| | | |
Db          780 GTCGGCCTCCGACCACCATGGCAAC-----TTCTC--
CATCACCATGCGCAACCTG 828

Qy          892 -----TG--TAGAGGCGCAC-----CAG-CGGGTGAAGTACACCAAGGACCA-
TACTG 935
      | |   | | | | | | | |   | | | | | | | |   | | | |   | | | |

| | |
Db          829 ACCCTGCTGGATAGCGGC-
CTCTACTGCTGCCTGGTGGTGGAGATCAGGCACCACCACTC 887

Qy          936 TGCCTCTACTGGG-CCA----GCCAAGTCTCGGGATGGTGAACGTACTGTCTA--
TTGC 988
      | | |   | | | | | | | |   | | | |   | | | |   | | | |

| | |
Db          888 GGAGC---ACAGGGTCCATGGTGCCATGGAGCTGCA-GGTG--
CAGACAGGCAAAGATGC 941

Qy          989 AACGTACACAAGC---ATGAACCCCTTGTGCT----
GTTTTGTGAGAGCTGTGATACTCT 1041
      | | | |   |   | | | | | |   | | | |   | | | |   | | | |

Db          942
ACCATCCAACCTGTGTGGTGTACCCATCCTCCTCCCAGGAGAGTGAAAGTAAGGGACCAAC 1001

Qy          1042 CACCTGCC-----GAG---ACTGCCAGCTCAATGCCACACAAGGACC----
ACCAGTACC 1088
      | | | | |   | |   | | | |   | | | | |   | |   | | | |

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||  
 Db 1002 CTCTTGCCCCTTTTGGGTTCTCTGTTTTCT-TCTGTCCTCA---  
 TCCTGCACCCAGACCC 1057

Qy 1089 AGTTCTTAGAGGATGCAGTGAGGAACCAGCGCAAGCTC-  
 CTGGCCTCACTGGTGAAGCGC 1147  
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|  
 Db 1058 TGTTT---GGAACCTCTG-  
 GCCTCATCACCCCAAGCCCTCAGAACCCCCCGGTCCTCCTC 1112

Qy 1148  
 CTTGGGGACAAACATGCAACATTGCAGAAGAGCACCAAGGAGGTTTCGCAGCTCAATCCGC 1207  
 ||| | | | | | | | | | | | | |

|  
 Db 1113 CTTTTCTGCTGCTGCACATCCCTTCTGCTTC-CTCCTTGGTG-----  
 CAATCC-C 1160

Qy 1208 CAGGTG---  
 TCTGACGTACAGAAGCGTGTGCAAGTGGATGTCAAGATGGCCATCCTGCAG 1264  
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Db 1161 CAGAAGCCCCTCTCCTTC-----CATCTGCTC-TGGA-GTCT--  
 CTGCTCCTCTTGACT 1211

Qy 1265 ATCATGAAGGAGC--TGAATAAGCGGGCCGTGTG--CTGGTCAATGATGCC-  
 CAGAAGG 1319  
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Db 1212 CTC-TGGAGTGGCTGTGCCTTGGCAGTGACCTTTGGCCAGGGCAA--  
 GTGCCTCA----- 1263

Qy 1320 TGACTGAGGGGCAGCAGGAGCGCCTGGAGCGGC--  
 AGCACTGGACCATGACCAAGATCCA 1377  
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|||  
 Db 1264 TGAC--AGGTACTG--GGTGCCCCAG--GCAGCTAAGTGCCG--CCCTGCCCA----  
 CCA 1311

Qy 1378 GAAGCACCAGGAGCACATTCTGCGCTTTG---  
 CCTCTTGGGCTCTGGAGAGTGACAACAA 1434  
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 Db 1312 GC--CCCCTATGGCTTGGGAAG-  
 GCTGGGGGTCTCTTGGCCAACAGGGTGAAACCCCAT 1368

Qy 1435 CAC-----AGCCC----TTTTGCTTTCTAAGAAGTTGATCTAC-----  
 TTCCAGCTGC 1478  
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|  
 Db 1369  
 CTCTACTAAAAACACAAAAATTAGCCAGGCATGGTGGTGCGCGCCTGTAGTCCCAGCTAC 1428

Qy 1479 ACCGGGCCCT---CAAGATGATTG-  
 TGGATCCCGTGGAGCCACATGGCGAGATGAAGTT 1533  
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|||  
 Db 1429 TCAAGAGGCTGAGGCAAGAGAATCGCTTGAACCCG-GGAGTCA-----  
 GAGGTT 1476

Qy 1534 TCAGTGGGACCTCAATGCCTGGACCAAGAGTGCCGAGGCCTTTGGCAAGATTG-  
 TGGCAG 1592

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|||
Db      1477 GCAGTG-----AGCCGAGATC----GCGCCACTGCACT---
CCAGCCTGCTGATAG 1520

Qy      1593 AGCGTCCTGGCACTAACTCAACAGGCCCTGCACC-----CATGGCC-----
CC 1635
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Db      1521 AG---
CAAGACTCCATCTCAAAAAAAAAACAACCCAAAATTTGCCTGGCATGGTGGCAGGCA 1577

Qy      1636
TCCAAGAGCCCCAGGGCCCCCTGAGCAAGCAGGGCTCTGGCAGCAGCCAGCCCATGGAGGT 1695
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|
Db      1578 TCTGTAATCCC---
AGCTACTCGGGAGGCTGAGACATGAGAGCTGCTTGAACCTGGGAG- 1633

Qy      1696
GCAGGAAGGCTATGGCTTTGGGTCAGGAGATGATCCCTACTCAAGTGCAGAGCCCCATGT 1755
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Db      1634 GCAGAA-----GTTGCAGTGAGCC--GAGATCA-CACCACTGCACTCCAG---
CCTGGGT 1682

Qy      1756 GTCAG-GTGTGAAACGGTCCC-----
GCTCAGGTGAGGGCGAGGTGAGCGGC 1801
      | ||| | | || | |||| | || | ||| || |
Db      1683
GACAGAGCGAGACTCTGTCCCAAAAAATCAAAAAATCACTTTTGGTAGAGATGCAC--T 1740

Qy      1802 CTTATGCGC-AAGGTGCCACGAGTGAGCCTTGAACGCCTGG-----
AC 1843
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||
Db      1741 CT----CGCTATGTTGCCCAGGCTG-
GTCTTGAACCTCCTGGGCTCAATTGATCTTCCCAC 1795

Qy      1844 CTGGACCTC-----ACAGCTGACAGCCAGCCA--
CCCGTCTTCAAGGTCT 1886
      || ||||| | |||| || |||| ||| || | ||| ||
|
Db      1796 CTTGACCTCCAAAGTGCTGGGATTACAGGTGTGAGCCA-
CCATGCCTAGCCTCAGGGAAT 1854

Qy      1887 TCCCAGGCAGTAC-CACTGAGGACTACA--ACCTTATTGTTATTGAACGTG----
GCGCT 1939
      || | || || | ||| | || ||| | || | | ||| | |
Db      1855 TCTTA-
TAAGAACTCTATGAAGTAGGCATCACCATCTTCTCTGTATCCATGGAAAGAGAG 1913

Qy      1940 GCC---GCTGCA-
GCTACCGGCCAGCCAGGGACTGCGCCTGCAGGAACCCCTGGTGCCC 1994
      ||| | || | |||| | | ||| | || | | | ||| |||
Db      1914 GCCTAGAGATGTATGCTAACTTGC--CCAAG--CT-CACAT-----
AGCCCAGGGT---- 1959

Qy      1995 CACCCCTGGCTGGCATG----GCCATTGTCAAGGAGGAGGAGACGGAG--
GCTGCCATTG 2048

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Db 1960 --AGCATAGCTGGGATGTTGAGCTGAGGCC--  
 GGAGGAGAAGTAGCAGTCGCTGGCA--- 2012

Qy 2049 GAGCCCCTCCTACTGCCACTGAGGGCC---CTG-----  
 AGACCAAACCTGTGCTT 2095

Db 2013 GAG-CACACAGGCTG-  
 CTCTGGGGGATGAGCTGGTGCGTTTAAGGAACAGGCCAGCAC-- 2068

Qy 2096 ATGGCTCTTGC-----GGAGGGTCCTGGTGCTGAG--GGTC-----  
 CCCGCCT-- 2136

Db 2069 -  
 TGGCATTGCAAGCAGTGGGGAAGGGGAGAGATGCCGAGGTGGTCAGTATCCTGACTTT 2127

Qy 2137 ----GGCCTCACCTAG--  
 TGGCAGCACCAGCTCAGGGCTGGAGGTGGTGCTCCTGAGG- 2189

Db 2128  
 CAGAGGCCTTTTTTTGTTTGTTTTAATTTTTGCTAGATTGATATTA AAAACTCATGTGGA 2187

Qy 2190 GTACCTCAGCCCCAGG-----TGGTGGCCCGGGAACCCTGGATGACAG-----  
 TGCC 2236

Db 2188 GGA ACTCA-----  
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Qy 2237  
 ACCATTTGCCGTGTCTGCCAGAAGCCAGGCGATCTGGTTATGTGCAACCAGTGTGAGTTT 2296

Db 2243 ACCAATT--TTTA ACTTTC-----TCTTCTCAT-----  
 TCCTGTTTTTCATTG 2282

Qy 2297 TGTTTTCCACCTGGACTGTACCTGCCGGCCCTGCAGGATGTACCAGGGGAGG-  
 AGTGGAG 2355

Db 2283 ATTTCCACATGTAGT----CCTTTTG---CT-  
 CAGGAAGTCTTTGGGGAAATTAAGGAT 2334

Qy 2356 CTGCTCA-CTCTGCCAT--GTGCTCC-----CTGAC--  
 CTGAAGGAGGAGGAT 2398

Db 2335 CTTTGAAGCTCTGAAATAGGTGATCAGGTTAGTGGTGTCTGTCAGCTGTC-  
 TAAGAGGTT 2393

Qy 2399 GGCAGC--CTCAGC-  
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Db 2394  
 GGAAAATGAACTACTCAAGATAGTCACGAAAATACTGAAAGTTTGATTTTTCTTTTC---- 2449

Qy 2456 GCCAACCAGCGGAAATGTGAGCGTGTACTGCTGGCC-----  
 CTATTCTGTACGAACCCTG 2511



GTTTCCAGCTAGTCTAGAGTTCTATATTTCTACATAGTTGAATTATTTTATCATGCTGT 3026

Qy 2937 --CTGGTGGC-CTGACTCCCACTCCCTGGTGGCCCC-----  
ATC----- 2972

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Db 3027 TGCTGGGGAATATGACTAACCCCT--  
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Qy 2973 CCCCAGT-----TCCTC--ACGATATGGTTTTTACTTCTGTG-----  
GATTTAAT 3015

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Db 3085  
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Qy 3016 AAAAAAACTTC-ACCAGTTCAAAAAAAAAAAAAAAAAAAAA 3056  
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Db 3145 AAAATCGCTTTATAACAGGAAAAAAAAAAAAAAAAAAAA 3186

## RESULT 2

US-10-478-914-4/c

; Sequence 4, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 4  
; LENGTH: 3210  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-4

Query Match 35.2%; Score 6879.5; DB 1; Length 3210;  
Best Local Similarity 43.8%; Pred. No. 0;  
Matches 1566; Conservative 0; Mismatches 1096; Indels 911;  
Gaps 220;

Qy 11 CCGGCGGCGGAGGCC-----GGGCC----  
GCGGAGCC 38

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Db 3209  
CGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTTTTTTTCTGTTATAAAGC- 3151

Qy 39 AGGAGTGACTAGCAGCAGTTGGCCGTGCCGTAGCAGCGTCCCGCGC-----  
GCGGCGGGC 93

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Db 3150 -GATTTTATTAAATTGATTTGGACATACTGTAG----

GTCAAATAATATTTTCTGAAGAT 3096

Qy 94 AGC-----GGCCCAGGAGGCGCGTGGTGCGGGTTTCGGCGGC----  
GGCTGAGGAAGAA 143

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Db 3095

AACAATTATGGACTTTAAAGCTCGACATAAAATTAGTAGCTTCAAAGGGTTAGTCATAT 3036

Qy 144  
GCGCGGGCGGCGCCTTCGGGAGGCGAGCAGGCAGCAGTTGGCCGTGCCGTAGCAGCGTCC 203

| | | | | | | | | | | | | | | | | | | | | |  
Db 3035 TCCC---CAGCAACAGCATGATAAAATAATTCAACTAT-----  
GTAGAAATATAG 2989

Qy 204 CGCGCGCGG-CGGGC-AGCGGCCAGGAGGCGCGTGGCGGCGCTCGGCCTCGC----  
GGC 257

| | | | | | | | | | | | | | | | | | | | | |  
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Db 2988 AACTCTAGGACTAGCTGGAACTCGGAAATCATTAGC--  
CTAATGTTCTCATTTTGAGA 2931

Qy 258 GGC GGC--  
GGCGGCAGCGGCCAGCAGTTGGCGGCGAGCGCGTCTGCGCCTGCGCG---- 311

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Db 2930 GAAAACTAGAC-TCAAAGATTAAGCGATTTGC-CCAAGCTCACAT--  
ACCTAATAGTAAT 2875

Qy 312 ---GC-GGGCCCCGCGCCCCTCCTCCC---  
CCCCTGGGCGCCCCCGGCGGCGTGTGAA-T 363

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Db 2874  
AAAGCTAGAAATCAAACCAATTTTCTTAAACTAAAATTCTATCAATGATATTTCAACT 2815

Qy 364 GCGGCCTCCGCGGCGGC--AGC----  
CTCGGCAGCAGCGGCCTCGGCCGCTCTGGCAG 417

| | | | | | | | | | | | | | | | | | | | | |  
Db 2814 GGCTATCAACTAAAGTCTAGGCTTTTCTCTAATGCT----CCACG-----  
CTATTGTGA 2764

Qy 418  
CCCCGGCCCCGGGCGAGGGCTCCGCTGGCGGCGAAAAGCGCTCCACCGCCCCTTCGGCC-- 475

| | | | | | | | | | | | | | | | | | | | | |  
Db 2763 CATGAAAGAGTGATAAGACACTAC-----  
AGTAAATCGTACTTGTGGAATTCAGGCCTG 2710

Qy 476 ---  
GCAGCCTCGGCCTCTGCCTCAGCCGCGGCGTCTGTCGCCCGCGGGGGGCGGCGCCGAG 532

| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 2709 GAAGGGGCTTTGGCAAATAACTAAGCC-----  
AGCCCTCTCTTTGTAAAAAGGAG 2660

Qy 533 GCGCTGGAGCTGCTGGAGC---ACTGCGG--  
CGTGTGCAGAGAGCGCCTGCGACCCGAGA 587

| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 2659 GAAAAGTATCTGAAGTGACTTACCAAAGGCTCGTTAGCAGAGA-TGTCTG-----  
GA 2609

Qy 588  
GGGAGCCCCGCCTGCTGCCCTGTTTGCCTCGGCCTGTAGTGCCTGCTTAGGGCCCGCGG 647  
| | | | | | | | | | | | | | | | | | | | | |

Db 2608 TTAAAATCCAGATATTGACAAATT--CACCC--CC--  
AAATCCCATCTCTAGTTTCATGG 2555

Qy 648 CCCCCGCCGC--CGCCAACAGCTCGGGGGACGGC-----  
GGGGCGGCGG----- 689  
| | | | | | | | | | | | | | | | | | | | | |

Db 2554 CCCAC-  
CCACTAAATCATGTGCTCCTTTTAAATCTCCTTTATGCGCTGAGGTTTTAGTTA 2496

Qy 690 -GCGACGGCACCCTGGTGGACTGTCCCGTGTGCAAGCAACAGTGCTT-  
CTCCAAAGACAT 747  
| | | | | | | | | | | | | | | | | | | | | |

Db 2495 TACAAAACCCC-----TTCCAGT---  
CAAACAGAAAAAATTAATTCAAATATGG 2449

Qy 748 CGTGGAGAATTA---TTTCA-----TGC GTGAT-----AGTGG-----  
CAGC-- 781  
| | | | | | | | | | | | | | | | | | | | | |

Db 2448  
AAAGAAAATCAAACTTTCAGTATTTTCGTGACTATCTTGAGTAGTTTCATTTTCCAACCT 2389

Qy 782 --AAGCTGCC-ACCGACGCCCAGGATGCGAACCAGTGCTGCACT-----  
AGCTGTGAGG 833  
| | | | | | | | | | | | | | | | | | | | | |

Db 2388 CTTAGACAGCTGACAGACACC-----  
ACTAACCTGATCACCTATTTTCAGAGCTTCAAAG 2335

Qy 834 AT-----AATGCCCCAGCCACCAGCTACTGTGTGGAGTGCTCGGAGCCT--  
CTGTGTGAG 886  
| | | | | | | | | | | | | | | | | | | | | |

Db 2334 ATCCTTAATTTCCCCAAAGACTTCCT-----  
GAGCAAAGGACTACATGTGGGAA 2285

Qy 887 ACCTGTGTAGAGGCGCACCAGCGGGTGAAGTACACCA-----  
AGGACCATACTG 935  
| | | | | | | | | | | | | | | | | | | | | |

Db 2284  
ATCAATGAAAACAGGAATGAGAAGAGAAAGTTAAAAATTGGTTGCTTTTGTTCCTGTCAT 2225

Qy 936 TG-----CGCTCTACTGGGCCAGCCAAGT-----  
CTCGGGATGGTGAACGTACTGTC- 982  
| | | | | | | | | | | | | | | | | | | | | |

Db 2224 TGGGGACTTTTGGTCTTCTAAACATTCTTGAGTTCCTCCACAT-  
GAGTTTTTAAATATCA 2166

Qy 983 -TATTGCAACG---TACACAAGCATGAA----CCCCT---TGTGCTGTTTTGTGA-  
GAGC 1030  
| | | | | | | | | | | | | | | | | | | | | |

Db 2165 ATCTAGCAAAAATTAAAACAAACAAAAAAGGCCTCTGAAAGT-  
CAGGATACTGACCACC 2107

Qy 1031 TGTGATACTCTCACCTGCCGAGACTGCCAGC-----TCAATGCCCCACAAGGACC--  
ACCA 1083  
| | | ||||| ||| || | ||||| || | | | | | |  
Db 2106 TCGGCATCTCTCCCCCTTCC-  
CCACTGCTTGCGAATGCCAGTGCTGGCCTGTTTCCTTAAAC 2048  
  
Qy 1084 GTACCAGTTCTT-----AGAGGATGCAGTGAG--  
GAACCAGCGCAAAGCTCCT----- 1128  
| ||||| || | ||||| | | ||| | | ||||| ||| ||  
Db 2047  
GCACCAGCTCATCCCCCAGAGCAGCCTGTGTGCTCTGCCAGCGACTGCTACTTCTCCTCC 1988  
  
Qy 1129 GGCCTCACTGGTGAAGCGCCTTGGGGACAAACATGCAACATT--  
GCAGAAGAGCACCAAG 1186  
| ||||| | | || | | | ||| || | | | | | |  
|  
Db 1987 GGCTCTCA--GCTCAACATCC-----CAGCTATGCTACCCTGGGCT-  
ATGTGAGCTTGG 1938  
  
Qy 1187 G-AGGTTTCGCAGCTCAATCCGCCAGGTGTCTGACGTACAGAAGCGTG--TGCA-  
AGTGG A 1242  
| | ||| ||| | ||| | ||| ||| | | | | ||| ||| |||  
||  
Db 1937 GCAAGTTAGCA--TACATCT-CTAGGCCTCT--CTTTC-----  
CATGGATACAGAGAAGA 1888  
  
Qy 1243 TGTC AAGATGGC--CATCCTGCAGATCATGAAGGAG----  
CTGAATAAGCGGGGCCGTGT 1296  
|| ||||| | | || | || || | | || ||| | || |||  
||  
Db 1887 TG--GTGATGCCTACTTTCATAGAGTTCTTATAAGAATTCCCTG---  
AGGCTAGGCATGGT 1833  
  
Qy 1297 GCTGGTCAATGATG----CCCAGAA----GGTGA CTGAG--GGGCAG--CAG--  
GAGCGC 1342  
| | ||| || ||||| | || | || ||| || || |||||  
|  
Db 1832 G--  
GCTCACACCTGTAATCCCAGCACTTTGGAGGTCAAGGTGGGAAGATCAATTGAGC-C 1776  
  
Qy 1343 CTGGAG--CGG---CAGCACTGGAC--  
CATGACCAAGATCCAGAAGCACCA----- 1386  
| |||| | |||| |||| | ||| | | | ||| ||||  
Db 1775 CAGGAGTTCAAGACCAGC-  
CTGGGCAACATAGCGAGAGTG CATCTCTACCAAAAAGTGATT 1717  
  
Qy 1387 -----GGAGCACATTCTGCGCTTTGCCTCTTGGGCT-----  
CTGGAGAGTG 1427  
|| || | ||| |||| || | | |||| ||| |  
|||  
Db 1716 TTTTTGATTTTTTTGGGACAGAGTCT-  
CGCTCTGTCACCAGGCTGGAGTGCAGTGGTGTG 1658  
  
Qy 1428 ACAAC--AACACAGC-  
CCTTTTGCTTTCTAAGAAGTTGATCTACTTCCAGCTGCACCGGG 1484  
| | ||| || ||| ||| | | | | ||| ||| |||  
Db 1657 ATCTCGGCTCACTGCAACTTCTGCCTCCCAGG-----  
TTCAAGCAGCT----- 1615  
  
Qy 1485

```

CCCTCAAGATGATTGTGGATCCCGTGGAGCCATGGCGAGATGAAGTTTCAGTGGGACC 1544
      |||   |||   |   |   |||||   |   |||   ||   |||
Db      1614  ---CTC---ATGTCTCAGCCTCCCGAGTAGC-----
TGGGATTACAG----- 1579

Qy      1545  TCAATGCCTGGACCAAGAGTGCCGAGGCC---TTTGGCAAG---
ATTGTGGCAGAGCGTC 1598
      |||||   |||   |   ||||   |||   |||||   |   ||   |   |
|||
Db      1578  ---ATGCCTG--CCACCA-TGCC-
AGGCAAATTTTGGGTGTTTTTTTTTGAGATGGAGTC 1526

Qy      1599  CTGGCACTAACTCAACAGGC---CCTGCACCCATGGCCC-----
CTCCAAGAGCCCC 1647
      |   ||   |||   |||   |||||   ||||   |||||   |   |||   |
||
Db      1525  TT-GCTCTA--TCAGCAGGCTGGAGTGCA---
GTGGCGCGATCTCGGCTCACTGCAACCT 1472

Qy      1648  AGGGCCCCCTGAG--CAAGCAGGGCTCTGGCAGCAGCC-----
AGCCCATGGAGGTGCAGG 1700
      |   |   ||   |   |||||   ||||   ||   |||||   ||   |||   |
||||
Db      1471
CTGACTCCCGGGTTCAAGCGATTCTCTTGCCTCAGCCTCTTGAGTAGCTGGGACTACAGG 1412

Qy      1701  AAGGCT-----ATGGC-----TTTGGGT-----
CAGGAGATGATCCCTAC 1735
      ||           ||||   ||||   ||           ||   ||   ||||
Db      1411
CGCGCACCACCATGCCTGGCTAATTTTTGTGTTTTTAGTAGAGATGGGGTTTCACCCTGT 1352

Qy      1736  T---
CAAGTGCAGAGCCCCATGTGTCAAGGTGTGAAACGGTCCCGCTCAGGTGAGGGC--- 1789
      |   ||||   ||   ||||   |||           |   ||||   |   |   ||||
Db      1351  TGGCCAAG---AGGACCCC-----CAG-----
CCTTCCAAGCCATAGGGGGCTG 1309

Qy      1790  -GAGGTGAGCGGCCTTATGC-GCAAGGTGCCACGAGTG--
AGCCTTGAACGCCTGGACCT 1845
      |   |   |||||   |   ||   ||   ||   ||   ||   ||   ||   ||
|||
Db      1308
TGGGCAGGGCGGCACTTAGCTGCCTGGGGCACCCAGTACCTGTTCATGAGGCACTTGCCCT 1249

Qy      1846  GGACC-----TCACAGCTGACAGCCAGCCAC-CC-----GTCTT-----
CAAGGTCTTCC 1889
      ||   |   ||||   ||   |   |||||   ||   |||           ||   |   |
|||
Db      1248  GGCCAAAGGTCAGTGCCAAGGCACAGCCACTCCAGAGAGTCAAGAGGAGCAGAGAC-
TCC 1190

Qy      1890  CAGGCACT-----
ACCACTGAGGACTACAACCTTATTGTTATTGAACGTGG 1935
      ||||           |   |||   |||   |   |||           |   |   |   |
|
Db      1189  AGAGCAGATGGAAGGAGAGTGGGCTTCTGGGGATTGC-
ACCAAGGAGGAAGCAGAAGGGA 1131

Qy      1936  CGCTGCCGCTGCAGCT-----

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ACCGG-----1956
      | ||| || |||||
Db      1130 TG-
TGCAGCAGCAGAAAAAGGAGGAGGACCGGGGGGTTCTGAGGGCTTGGGGTGATGAGGC 1072

Qy      1957 -----CCAGCCAGGGACTGCGCCTGCAG-----
GAACCCCTGGTGCCCCA 1996
      ||| ||||| ||| | |||||
|
Db      1071 CAGAGTTCCAAACAGGGTCTGGG--
TGCAGGATGAGGACAGAAGAAAACAGAGAACCCAA 1014

Qy      1997 -----CCCCTGGCTGG--CATGGC---
CATTGTCAAGGAGGAGGAGACGGAGGCTGCCA 2045
      | || ||| | | | || | || | ||||| | |
|||
Db      1013 AAGGGGCAAGAGGTTGGTCCCTTACTTTCACTCTCCTG--
GGAGGAGGATGGGTACACCA 956

Qy      2046 -----TTGGAGCCCCT---CCT-ACTGCCACTG-AGGGCCCTGAGACCA---
AACC 2088
      ||| || || ||| |||| ||| || ||| ||| |
||
Db      955
CACAGTTGGATGGTGCATCTTTGCCTGTCTGCACCTGCAGCTCCATGGCACCATGGACCC 896

Qy      2089
TGTGCTTATGGCTCTTTCGCGAGGGTCCTGGTGCTGAGGGTCCCCGCCTGGCCTCACCTAG 2148
      ||||| | | || || |||| | || | || || || ||
|||
Db      895 TGTGCT-----CCGAGTGGTGGTGCCTGAT-CT-----CCACCACCAGGCAGCA-
GTAG 849

Qy      2149 TGGCAGC--ACCAGC----TCAGG----GC-TGGAGGTGGTG-----
GCTCCTGAGGGT- 2191
      ||| || ||||| ||||| || ||| | ||| | || | ||
|||
Db      848 AGGCCGCTATCCAGCAGGGTCAGGTTGCGCATGGTGATGGAGAAGTTGC-
CATGGTGGTC 790

Qy      2192 -----ACCTCAGCC-----CCAGGTGGTGGCCCG----
GGAACCCCTGGAT 2227
      || ||||| ||||| ||||| | || | |||||
|
Db      789
GGAGGCCGACTCCAGCCCGTGGCGCTGAGCCAGGTCGTGGCTGGTGTGGCAGCCTGG-T 731

Qy      2228 GACAGTGCCACCAT-TTGCC-GTGTCTG-
CCAGAAGCCAGGCGATCTGGTTATGTGCAAC 2284
      | ||| |||| ||| |||| | || | || | || | || ||| ||
Db      730 G-----GCCTCCATGGTGCAGGTGAAGGTCCTGGAACGTGAGGTTGCGG--
ATGGGCCCG 678

Qy      2285 CAGTGTGAGTTTTGTTTCCACCTGGACTGTACCTGCCGGCCCTGCAGGAT---
GTACCA 2341
      | | |||| | || ||| |||| | || |||| | | |
|||||
Db      677 CGCTCTGAG-----CAGGTCTG-CACCT--CGCCCCCT-
CGAGCTGCGGTACCA 634

```



Qy 2342 GGGGAGGAGTGGAGCTGCTCAC-TC-TGCCATGTGCTCCCTG-----  
ACCTGAAGG 2390  
  
|||  
Db 633 ----  
CGTCTTGTAAGGTCACATCGTGCCCTTTGTCCACAGGGCCCAAGAGCCTGCAGG 578  
  
Qy 2391 AGGAGGATGGCAGCCTCAGCCT--GGATGG---  
TGCAGACAGCACTGGCGTGGTGGCC-- 2443  
  
||| || | || ||| ||| | | ||| | || |||||| | ||  
Db 577 T-GAGGGTGACGTTCTGCCCCCTCGGGACAGACATAACAGGGAATAC-  
GGCGTGGCGACCTT 520  
  
Qy 2444 --  
AAGCTCTCACCAGCCAACCAGCGGAAATGTGAGCGTGTACTGCTGGCCCTATTCTGTC 2501  
  
||| ||| ||| | ||| || | ||| | | |||  
Db 519 GAAGGCTGCCACCGG---ACCTGC-----TCAGAGAGAG----GAGAGCC-----  
CTGTC 477  
  
Qy 2502 ACGAACCTTGCC--  
GCCCCCTGCATCAGCTGGCTACCGACTCCACCTTCTCCCTGGACCA 2559  
  
| ||| | || ||| | |||| || ||| |  
Db 476 A-----CCTGACTGATCCAGTGCTACTCCTGGCAAC-----  
CCCAG----A 440  
  
Qy 2560 GCCCGGTGGCACCCCTGGATCTGACCCTGATCCGTGCCCGCCT----  
CCAGGAGAAGTTGT 2615  
  
|| || | || | | | ||| | | ||| ||| |||| | |  
Db 439 GCGGGGAAGAACC-----TTAGCCTCTGCTACTTCCCAGCCACAGGCCAGGGGCA--  
TGT 387  
  
Qy 2616 C-----  
ACCTCCCTACAGCTCCCCACAGGAGTTTGCCAGGATGTGGGCCGCATGTTCAA 2670  
  
| ||||| || ||| ||| ||| || || ||  
Db 386 CAGCTGACCTCCCTAAGACTGCCTTCTGCA-TTTGTTCA-----  
CAAACCC-- 342  
  
Qy 2671 GCAATTCAACAAGTTAACTGAGGACAAGGCAGACGTGCAGTC-  
CATCATCGGCCTGCAGC 2729  
  
|| | || | | ||| | || || | ||| | || | | |  
Db 341 -CACTCCATCC--TAGGCTGTTGTAGGGGGAGTC--  
ACAGAAGCTTCCCCAACTAGGGGT 287  
  
Qy 2730 GCTTCTTCGAGACGCGCATGAACGAGGCCTTCGGTGACACCAAGTTCT---  
CTGCTGTGC 2786  
  
||| || || || || ||| || ||| || | ||| ||| |||  
Db 286 GCTCCT---GGATGC---  
TGGACAGGGCAGGGAGAGACTTGAGGGGCAGTGATGCAGT-C 234  
  
Qy 2787  
TGGTGGAGCCCCCGCCGATGAGCCTGCCTGGTGCTGGCCTGAGTTCCCAGGAGCTGTCTG 2846  
  
||| ||| || | || || | || | || ||| ||| |||  
Db 233 GGGTGTGTCCCTCTTC-----CCAGTAG-----  
AGTATATGCAAAACCTGTTGG 190

Qy 2847 GTGGCC--CTGGTGATGGCCCCTG-  
 AGGCTGGAGCCCCATGGCCAGCCCAGCCTGGCTC 2903  
 |||| | ||| || | | ||||| | || |||| | | || |  
 Db 189 GTGGGAGGCAGGTTGGGGAGCAGGAAGGCTGTTTCGAACAG---CAGCTC--  
 CTTGTCCT 135

Qy 2904 TG--TTCTCTGTCCTGTACCCCCATCCCCACT-  
 CCCCTGGTGGCCTGACTCCCACTCCCT 2960  
 || ||||| | | | | | | | | |||| | || |||| |  
 Db 134 TGGCCGCTCTGTAGGGGC-CATCAACACCTCTGCCCCT-----  
 TCCTACTCCTA 87

Qy 2961 GG--TGGCC---CCATCCCC-CAGTTCCT-----  
 CACGATATGGTTTTTACTTCTGTGGA 3009  
 || || | ||||| | | | | || | | | | | | | | |  
 Db 86 GGA CTGAACATGCCTTCCCATCCTTGCCAGGGAGCACTAAGAG-----  
 AGCACCTGCGTG 32

Qy 3010 TTTAATAAAAAAACTTCACCAGTT--CAAAAA 3040  
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 Db 31 T-----GCAAGGCCTGGGCCAGTAGGCCAACA 5

RESULT 3

US-10-478-914-21  
 ; Sequence 21, Application US/10478914  
 ; Patent No. 7335755  
 ; GENERAL INFORMATION:  
 ; APPLICANT: NAKAGAWARA, AKIRA  
 ; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
 ; FILE REFERENCE: 7388-80899  
 ; CURRENT APPLICATION NUMBER: US/10/478,914  
 ; CURRENT FILING DATE: 2003-11-26  
 ; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-162775  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-255226  
 ; PRIOR FILING DATE: 2001-08-24  
 ; NUMBER OF SEQ ID NOS: 417  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 21  
 ; LENGTH: 3589  
 ; TYPE: DNA  
 ; ORGANISM: Homo sapiens  
 US-10-478-914-21

Query Match 33.8%; Score 6611; DB 1; Length 3589;  
 Best Local Similarity 42.8%; Pred. No. 0;  
 Matches 1599; Conservative 0; Mismatches 1272; Indels 864;  
 Gaps 210;

Qy 2 CGGGGCGGGCCG-----GCGGCGGAGG---CCGGGC---  
 CGCGGAGCCAGGAGT 44  
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 Db 6 CTGGATTGCGCCATCATTTTGCACACTGCGAGGGGCTCCGTGTGTGCGC----  
 CCTGTCTT 61

Qy 45 GACTAGCAGCAGTTGGCCGTGCCGTAGCAGCGTCCCGCGCGCGGCGGGCAGCGGCCAGG 104  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 62 GTCTGGCCGTCCTCATCCCTTCCCCACCCCCTGCCGC-  
 CACTCCGACCCGCTCCCAAAG 120  
  
 Qy 105 AGG---CGC-  
 GTGGTGCGGGTTTCGGCGGCGGCTGAGGAAGAAGCGCGGGCGGCGCCTTC 160  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 121 TGGCTTCACAATAGT-CGGTCCTCGGCG-----  
 GTGTAGGCTGCGC---- 160  
  
 Qy 161 GGGAGGCGAGCAGG-  
 CAGCAGTTGGCCGTGCCGTAGCAGCGTCCCGCGCGCGGCGGGCAG 219  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 161 -----  
 ACCAGGTCCACACTTAAGCGAAATCAAGGAGACCCCCTTCTACTTCTACCTT 212  
  
 Qy 220 CGGCCCAGGAGGCGCGTGGCGGCGCT-  
 CGGCCTCGCGGCGGCGGCGGCGGCAGCGGCCA 278  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 213 TGGGTTTGGT-GCTCAATGCGAAGCTGCTGCAACTCAGACACGCCTAAGTCAAC--  
 TCAT 269  
  
 Qy 279  
 GCAGTTGGCGGCGAGCGCTCTGCGCCTGCGCGGCGGGCCCCGCGCCCCTCCTCCCCCCC 338  
 | | | | | | | | | | | | | | | | | | | | | |  
 | |  
 Db 270 GCAGAAAAGGAGA-AAAGTTTTGGTATAC---  
 AAATGCTCTCAGTCCAGCCAGACACCA 325  
  
 Qy 339 TGGGCGCCCCCGGCGGCGTGTGAATGGCGGCCTCCGCGGCGGCA--  
 GCCTCGGCAGCAGC 396  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 326 AG-----CCGAAAGGTTGTG-CTGGCTGCAACCGAAAGATCAAGGAC-  
 CGGTATCTTC 376  
  
 Qy 397 ----GGC-CTCGGCCGCCTCTGGC----  
 AGCCCCGGGCCCCGGGCGAGGGCTCCGCTG---- 443  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 377 TAAAGGCACTGGACAAATACTGGCATGAAGACTG--CCTGAAGTGTGC-  
 CTGCTGTGAC 432  
  
 Qy 444 ----GC---GGCGAAAAGCGCTCCACC---  
 GCCCCTTCGGCCGCGAGCCTCGGCCTCTGCC 493  
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 Db 433 TGTCGCTTGGGGGAGGTGGGCTCCACCCTGTACACTAAAGC--  
 TAATCTTATCCTTTGTC 490  
  
 Qy 494 TCAG-----CCGCGGCGTCTGTCG--CCCGCGGGGGGCGGCGCCGAGGCGCTGGAG-  
 CT 543  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 491 GCAGAGACTATCTGAGGC-TCTTTGGTGTAAACGGGAAACTGCGCTGC-----  
 CTGTAGTAA 545  
  
 Qy 544 GCTGGAGCACTGCGGCGTGTGCAGAGAGCGCCTGCGACCCGAG---  
 AGGGAGCCCCGCCT 600

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      |||  ||  | || | || | || | ||  ||  ||  ||  ||  ||
|||
Db      546 GCT----CATCCCTGCCTTTG-AGATGGTG-
ATGCGTGCCAAGGACAATGTTTACCACCT 599

Qy      601 G--CTGCCCTGTTTGCAC-TCGGC-CTGTAGTGCCTGC---
TTAGGGCCCCGCGGC----- 648
      | ||||  |||||  || ||  |||| | | |  || | |  | | |
Db      600 GGA CTGC----TTTGCATGTCAGCTTTGTAAT--
CAGAGATTTTGTGTTGGAGACAAATT 653

Qy      649 ---CC-----CCG----CCGCCGCCA-ACAG-CTCGGGGGACGG---
CGGGGCGGC 687
      ||  |  ||  |||| || | || | ||| ||  |

|
Db      654
TTTCCTAAAGAATAACATGATCCTTTGCCAGACGGACTACGAGGAAGGTTTAATGAAAGA 713

Qy      688 GGGCGACGGCACC GTGGTGGACTGTCCCGTGTGCA-AGCAACAGTGCTTCTCCAAAG-
AC 745
      || | |  || |||  ||| | |  || | | |  || |||

||
Db      714
AGGTTATGCACCCCAGGTTGCTGATCTATCAACATCACCCCATTAAGAATACAGAGCAC 773

Qy      746 ATCGTGGAGAATTATTTTCATGCGTGATAGTGGCAGCAAGGCTGCCACCGACGCC--
CAGG 803
      | |  | ||| ||| | |  || |  || ||| |  || |

|
Db      774
TACATTCTTTTATCTTTTTTGTCTCCACATGTACATAAGAATTGACACAGGAACCTACTGA 833

Qy      804 AT-GC---GAACCAGTGCTGCA--
CTAGCTGTGAGGATAATGCCCCAGCCACCAGCTACT 857
      || ||  ||  ||  |||  | | | |  ||| |  ||  |||

||
Db      834 ATAGCGTAGATATAGGAAGGCAGGATGGTTATATGGAATA---
AAAGGCGGACTGCATCT 890

Qy      858 GTGTGGAGTGCTCGGAGCCTCTGT---
GTGAGACCTGTGTAGAGGCGCACCAGCGGGTGA 914
      || || ||||  ||| | ||  | |  ||| ||  | |  ||

|
Db      891 GTATGTAGTG-
AAATTGCCCCAGTTCAGAGTTGAATGTTTATTATTAAAGAAAAAAGTAA 949

Qy      915 AGTACACCAAGGAC-----CATACTGTGCGCTCT-----
ACTGGGCCAGCCA 956
      |||||  | | |  | | || | || | |  ||| ||| |

|
Db      950 TGTACA--
TATGGCTGGATTTTTTTGCTTGCTATTTCGTTTTTGTGTCACTTGGCATGAGA 1007

Qy      957 AGTCTC----GGGATGGTGAACGTACTGTCTATTGCAACGT-----
ACACAAGCATGA-- 1005
      || |  || | || | || ||  |||| || |  ||||  | |

Db      1008 TGTTTATTTTGGACTATTGTATATAATG--
TATTGTAATATTTGAAGCACAAATGTAATA 1065

Qy      1006 -----ACC-----CCTTGTGCTGTTTTGTGAGAGCTG----

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TGATA 1037  
 ||  
 Db 1066 CAGTTTTATTGTGTTACCATTGTGTTCCATTGCTTCTTTGT-  
 ATTGTTGCATTTAGTA 1124

Qy 1038 CTCTCACCTGCCGAGACTGCCAG---  
 CTCAATGCCCACAAGGACCACCAGTACCAGTTCT 1094  
 | ||| || | ||| | | |||| | |||| | ||  
 |  
 Db 1125 CAATCA-GTGTTTAACTTACTGTATATTTATGCTTTCTGTATTTACCAG---  
 CTATT-T 1179

Qy 1095 TAGAGGATGCAGTGAGGAACCAGCGCAAGCTC-----  
 CTGGCCTCACTGGTGAAGCGCC 1148  
 || || || || || | || | | | |||| || |  
 |  
 Db 1180 TAAATGA-  
 GCTGTAACTTTCTAGTAAAGAATTGAAAAGCAAATCTCACTAATGATACACA 1238

Qy 1149 TTGGGGACAAACATG-----CAACAT-----  
 TGCAGAAGAGCACCAAG- 1186  
 | || || | |||| | || || ||  
 ||  
 Db 1239  
 GATAGATAAAGCAAGTCTATCAACATTAAAAATACTAAAAATAAAGACACACACAGAGC 1298

Qy 1187 -----GAGGTTTCGCAGCTCAAT-CCGCCA-----GGTGTCTGAC---  
 GTAC----- 1223  
 || | | | || | |||| | |||| | || |  
 Db 1299  
 ATTTTAGTGACATCCACTACTTATTGCCGCTATGAGTTAGAGTCTATCAGTGTTCTTGTT 1358

Qy 1224 AGAAGC----  
 GTGTGCAAGTGGATGTCAAGATGGCCATCCTGCAGATCATGAAGG----A 1275  
 | || | | || | || | || | || | || ||  
 |  
 Db 1359 ATAACCCCTATTTTTCAGG-  
 GGGTTAAAAATCAGCTTTAAAAAATACATAAAAATTTCA 1417

Qy 1276 GCTGAATAAGCGGGGCCGTGTGCTG-----GTCAATGATGCC-----  
 AGAAGGTGACTG 1325  
 || | |||| | | | | || || |||| |||| |  
 |||  
 Db 1418 TCTTA--AAGCACTTTCATTTTATACCAACGTGAAAAGTGCCATTTTATAGAA--  
 TAACTT 1473

Qy 1326 AGGGGC--AGCAGG-----AGCGCCT-----GGAGCGGCAGCACTGG-  
 ACCAT 1365  
 || | |||| | || | || | || || ||  
 ||  
 Db 1474 TAAAGCTTAACAGGTTTCTTTTAAATATCCTTTTTTTGTGTGC-  
 TCTTTACTTACACAAT 1532

Qy 1366 GACCAAG-----ATCCAGAAGCACCAGGAGCACATTCTGCG--CTT-  
 TGCCTCTTGG 1414  
 | | | |||| |||| | || || | || ||||  
 ||||  
 Db 1533 GGCTTTGTTTTGCTTTTTTTCAGCCACACC-----CCTTATGTGAACTAGTGCCT-  
 TTGG 1584

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Qy          1415 G-----CTCTGGAGAGTGAC---AACAAAC---
ACAGCCCTT-----T 1445
|
Db          1585
GTATCACGTAAAATTTTTTCCAAAGGGTTACTTTAAAAATCTGTTACCACAATTATGAGA 1644

Qy          1446 TGCTTTCTAAG----AAGTTGATCTACTTCCAG-----
CTGCACCGGGGCCCTCAAGA 1493
|
Db          1645
TGATTTTTTAAGTGATAAAATTAACTTCTTCTTGTATAAAATTCTGCCCAGATCTCTCCACA 1704

Qy          1494 TGA-TTGTGGATCCCGTGGAGCCACATGGCGAGATGAA-----
GTTTC 1535
|
Db          1705 AGAGCTGAGGGTTTCAT--
AACTTTATGGCTTAATAAATGTATGACACTGAAAAGATTTG 1762

Qy          1536 AGTGGGACCTCAATGCCTGGA---CCAAGAGTGCCGAGGCCTTTG--GC-
AAGATTGTGG 1589
|
Db          1763 AGTGGA-ATCTA---CTGAAATCACTATAATGC-----
ACATTGAAGCTATGATGGTAT 1813

Qy          1590 CAGAG-CGTCTTGGCACTAACTCAACAGGCCCTGCA-----
CCCATGGCCCCCTCC----- 1638
|
Db          1814 TTGAGTAGTGAGGTTACTT--
TTGATCGGAGCAACATAATGCTCATAGAATCTTCTAGAA 1871

Qy          1639 -AAGAGCCCCAGGGCCCCCTGAGCAA--GCAGGGCTCTGG-----
CAGCA- 1679
|
Db          1872
GAAGAGAAACAAAGGGATTGATAAAATGCTGAGAACTAGTGATTATATATTTTTTCTGTAT 1931

Qy          1680 --GCCAGCCC-----ATGGAGGTGCAGGAAG-----
GCT 1706
|
Db          1932
TTACCTGACATTTATTTTAATGTTCAAAAAGTAAACACTTTAAGTTTGATGTGTTTTACT 1991

Qy          1707 ATGGCTTTGGGTCAGGAGATGATCCCTACTCAAGT-----
GCAGA-----G 1747
|
Db          1992 CTCTCATTGTTTTAAGTAAT--
TGCCAACTCAGAATACATCATTCTTAGGCTGAAATTTG 2049

Qy          1748 CC---CCATGTGTCAGGTGTGAAACGGTCCCG-CTCAGGTGAGGGC-----
GAGGTGA 1796
|
Db          2050 TCTTCCATTTTTTAAG-
GTGAAATAGTACTACCTTACGTGATAGCATACAAAGAAGAAA 2108

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Qy 1797 GC-----GGCCTTAT-GCGCAAGGTGCCACGAGTGAGCCTT--  
GAACGCCTGGAC 1843  
|  
Db 2109  
GCTCTAGAAAGAGAAATTATGGAGAATGATTATTTAAATTACAATTAAGGAAATGAGAAT 2168

Qy 1844 CTGGACCTCACAGCTGA-CAGCCAGCCACCCGTCTTCAAGGTCT----TCCCAG--  
GCAG 1896  
|  
Db 2169  
ATGATCCCCTCTTCCGAGTTGCCACAAACTTGCTTCTTTGCTTTTGCTCCCTGTAATAG 2228

Qy 1897 TACCACTGAGGACTACAACCTTATTGTTATTGAACGTGGCGCTG-----  
CCGC 1944  
|  
Db 2229 AACTACT-----TTTCAACAAATCTAATTTTGCAC--  
GGCACCGTTAACCATATTTTCAC 2281

Qy 1945 TGCAGCTACCGGCCAGCCA-GGGACTGCGCCTGC-----  
AGGAACCCCTGGTGCCCCACCC 1999  
|  
Db 2282 TACAGCAAACCTTAGTGCTATGGGTTTTCTTTTTCTTTGTTTTTTTTCTTGAT-----  
CAC 2335

Qy 2000 CTGGCT-GGCATGGCCATTGTCAAGGAGGAGGAGACGGAGGCTGCCATTGGA-----  
GCCC 2054  
|  
Db 2336 TTGTATAGGAAACAACATTTTCCAG-----  
TGTTATTTGCATATATATTTTGTCC 2385

Qy 2055 CTCCTA---CTGCC--ACTGAGGGCCCTGAGA--  
CCAAACCTGTGCTTATGGCTCTTGCG 2107  
|  
Db 2386 TTCCAATATATGCATTACAGATGAAAATTAAATGTTATACCTG-----  
AATTCTTGGG 2438

Qy 2108 GAGGGTCC-----TGGTGCTGAGGGTCCCCGCCTGGCCTCACCTAGTGGCAGCAC-  
CAG 2160  
|  
Db 2439 TTGGGGCCAAAATATTAAGCTGAAAATAAT--  
GCTGGTGTGGATTTGTTTTAAACAAAG 2496

Qy 2161 CTCAGGGCTGGAGGTG---GTGGCTCCTGAGGGTACCTCAGC---CCCAGGTGGTGG-  
CC 2213  
|  
Db 2497  
CTTTATTATGAACATGCATGTGAATCTGGATATTGCCTCTTATTTTTAAGAAAATGGTTC 2556

Qy 2214 CGGGAACCCTGGATGACA---GTGCCACCATTTCG--C-----  
GTGTCTGCCAGAAG 2260  
|

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Db      2557  
TGTGAAAAGTGAAATGATATGTATTTTTTCCAAATGCTTCATGGTTAGGAGTCTTCAAGTT- 2615  
  
Qy      2261 CCAGGCGATCTGGTTATGTG--CAACCAGTGTGAG-----  
TTTTGTTT 2301  
| | | |   |   | | | |       || | |   || |  
Db      2616  
CCATGTTCCCCAGATTGAGATATACTAAAGAAAGAAATTCAAAGTAGCTATTTGGGGC 2675  
  
Qy      2302 CCACCTG---GACTGTCA-----  
CCTGCCGGCCCTGCAGGATGTACCAGGGGAGGAGTG 2352  
    ||||          || | |     |||        || | | ||   || | |   ||  
|  
Db      2676 CCACAAAAATAACTATTATTTTAGCCTTAGAGCCTTACA-  
CTTGTTTCATGAAGAGAAAG 2734  
  
Qy      2353 GAGCTGC-TCACTCTGCCATGTGCTC----CCTGACC-----  
TGAAGGAG-- 2392  
    ||   ||| | ||         | | | |   |   |   |||           ||   ||||  
Db      2735 GACTTGCATAAC-----  
CAAAATAAACAAAGCAAGACAAATTAAAAAATATGTGGGGGAGAG 2790  
  
Qy      2393 ----GAGGA---TGGCAGCCT-----CAGCCTGGATGGTGCAGA-  
CAGCACTGGCGTG-- 2437  
    | | |   |||         ||           |||| | |||| |   |   | | | | | | | |  
Db      2791  
ATCAGTGAAAAGTGGTTTTCTTAATGCAGCCCTGCTGGTCCCATTAAACAATTGCTTGAA 2850  
  
Qy      2438 -----GTGGCCAAGCTCTCA-  
CCAGCCAACCAGCGGAAATGT 2473  
                                | | || | ||| |   |||   | |   | |  
|  
Db      2851  
ATTACATGGATGTAAAAATTATAATTGTCAGGATCTTATTCAGATGATCTTTTAAGGT-T 2909  
  
Qy      2474 GAGCGTGTACTGCTGGCCCTATTC----TGTCACGAACCCTG-----  
CCG 2514  
    | |   ||   ||||         |   ||       |||| |   |   ||  
Db      2910  
TAACTGGTTTTGCTTTTGTATCTATATGTCAAAATACTTGTA AATTGGGAACAACTT 2969  
  
Qy      2515 CCCCCTGCATC-AGCTGGCTACCGACTCCACCTTCTCCCTG---  
GACCAGCCCGGTGGCA 2570  
    | | | | || | |   |   |   |||   |||| |   |||   |||| |   |  
Db      2970 CTCTCAGCTTCTTGAAGTTGTTCAACT-  
ATCCTTGCCACTGGAAGACCAAACAAGGTTTT 3028  
  
Qy      2571 CCCTGGATCTGACCCTGATCCGTGCCCCGCTCCAGGAGAAGT-  
TGTCACCTCCCTACAGC 2629  
    | |||   ||         || | | |       ||   |||| |   | | |   | | |  
|  
Db      3029 CACTG---CTTTTCTTTTACATAATATGCT----  
GAGAATTATTTCTTATGCTTTTTAC 3081  
  
Qy      2630 TCCCCACAGGAGTTTGC-CCAG-----GATGTGGGCCGCA---  
TGTTCAAGCAAT--- 2675  
    | |   |||   | |   | | | |       |||   |||| |   |||| |   ||  
Db      3082  
TACAAACAAAATTACTCACCTGGATTAAAGATTAAGGCCTTAATCTGTTTAGATTATCTT 3141
```



Qy 2676 ---  
TCAACAAGTTAACTGAGGACAAGGCAGACGTGCAGTCCATCATCGGCCTGCAGCGCT 2732  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 3142 TAATCTCCATGAAATCGTGAAATAAGAC--  
AAGAATAGTGTTCAGCTGTAGGCCATTTT 3199

Qy 2733 TCTTCGAGACGCGCATGAA-  
CGAGGCCTTCGGTGACACCAAGTTCTCTGCTGTGCTGGTG 2791  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 3200 ACAGCTAATTGCCCATAAATTGTAGCATTTATTGACCTGAAGTACTAAGC--  
TAATTGTC 3257

Qy 2792 GAGCCCCCGCCGATGAGCCTGCCTGG--TGCTGGC--  
CTGAGTTCCCAGGAGCTGTCTGG 2847  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 3258 TTGACTACTC---AAAGCC--CCTGAATTGTTGTCAACT---TTCCCCTTTG-  
TGTTGTG 3308

Qy 2848 TGGCCCTG--GTGATGGCCCCTG-AGGCTGGAGCCCCCA--TGGCCAGCCCAGCCTG-  
GC 2901  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 3309  
TAGCCCTAACGTCATTTAGCTTGTTGTCTGATGCCTCCAGTAGGACACCTCCGATGGAGC 3368

Qy 2902 TCTGTTCTCTGTCTGTACCCCCATCCCCACTCCCCTGGTGGCCTGACTCCCA----  
CTC 2957  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 3369 TTTGATTTCTGAGCAG----CGAAAGCTCCCTTCCTAAGATGCAT--  
CTCGCATAGGCTG 3422

Qy 2958 CC-----TGGTGGCCC---CATCCCCCAGTTCCTCA---  
CGATATGGTTTTTTACTT---C 3003  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 3423 CCTATGATGAAGGACCGTGCA-  
CCTCCACTCCAACAGAGTGCTGAGTTTAAAGTTGACC 3481

Qy 3004 TGTGGATTTAAT-----AAAAAAACTTCACCAG-----  
TTCAAAAAA 3041  
Db 3482  
TGTGTTTGTAATTTCACTTTTCATCTTGCTTAATAAATATCTGCTGGATTCTTTCAAAAAA 3541

Qy 3042 AAAAAAAAAAAAAAAAAA 3056  
| | | | | | | | | | | | | | | | | | | | | |  
Db 3542 AAAAAAAAAAAAAAAAAA 3556

RESULT 4  
US-10-478-914-21/c  
; Sequence 21, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 21  
; LENGTH: 3589  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-21

Query Match 32.3%; Score 6319.5; DB 1; Length 3589;  
Best Local Similarity 40.4%; Pred. No. 0;  
Matches 1545; Conservative 0; Mismatches 1195; Indels 1083;  
Gaps 224;

Qy 1 GCGGGGCGGGCC-----GGC-----  
GGCGGAGG 23 || | || || || | ||

Db 3587  
GCAGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGAAGAAT 3528

Qy 24 CCGGGCCGC-----GGAGCCAG----GAGTG-----  
ACTAGCAGCAGTTGGCCGTGCC 67 || || | || | || | || | || | || | || |

Db 3527 CC-AGCAGATATTTATTAAGCAAGATGAAAGTGAAATTACAAACA-  
CAGGTCAACTTTTA 3470

Qy 68 GTAGCAGCGTCCCGC--GCGCGGCGG-GCAGCGGCC-----AGGAGGC----  
GCGT 112 || | | | | | | | | | | | | | | |

Db 3469 AACTCAGCACTCTGTTGGAGTGGAGGTGCA-  
CGGTCCTTCATCATAGGCAGCCTATGCGA 3411

Qy 113 GGTGC-----GGG---TTTCGGCGGCGGCTGAGGAA--  
GAAGCGCGGGCGCG-- 155 | || | || | || | || | || | || | || |

Db 3410 GATGCATCTTAGGAAGGGAGCTTTC----  
GCTGCTCAGAAATCAAAGCTCCATCGGAGGT 3355

Qy 156 --CCTTCGGGAGGCGAGCAGGCAGCAGTTGGC--  
CGTGCCGTAGCAGCGTCCCGCGCGCG 211 || | || || | || | || | || | || | || |

Db 3354 GTCCTACTGGAGGC-ATCAGACAACA---AGCTAAATGACGTTAGGGCTACAC-  
AACACA 3300

Qy 212 GCGGG-----CAGCGGCCAGGAGGC---GCGTGG---CGGC-----  
GCTCGG--C 249 || | || | || | || | || | || | || |

Db 3299 AAGGGGAAAGTTGACAACAATTCAGG-

GGCTTTGAGTAGTCAAGACAATTAGCTTAGTAC 3241

Qy 250 CTCGCGGCGGCGGCGGCGGCAGC-----GGCCC--AGCAGT----TGG----CGGC--  
GA 292

| | | | | | | | | | | | | | | |

Db 3240  
TTCAGGTCAATAAATGCTACAATTTATGGGCAATTAGCTGTAAAATGGCCTACAGCTGAA 3181

Qy 293 GCGC-----GTCT-----  
GCGCCTGCGCGGCGGGCCCCGCGCCCTCCTCCCC---- 335

| | | | | | | | | | | | | | | |

Db 3180  
ACACTATTCTTGTCTTATTTACGATTTTCATGGAGATTAAAGATAATCTAAACAGATTAA 3121

Qy 336 --CCCTGGGC---GCCCCGCGC---  
GCGTGTGAATGGCGGCCTCCGCGGCGGCAG---- 383

| | | | | | | | | | | | | | | |

Db 3120  
GGCCTTAATCTTTAATCCAGGTGAGTAATTTTGTGTTGTAGTAAAAAGCATAAGAAATAAT 3061

Qy 384 CCTCGGC-----AGCAGCGGCCTCGGCCGCC---TCTGG-CAGCCCG-  
GGCCC 426

| | | | | | | | | | | | | | | |

Db 3060  
TCTCAGCATATTATGTAAAAGAAAAAGCAGTGAAAACCTTGTGTTGGTCTTCCAGTGGCAA 3001

Qy 427 GGGCGAGGGCTCCGCT-----GGCGGCGAAAAG--CGCTCC-----  
ACCGCCCCTTCG 472

| | | | | | | | | | | | | | | |

Db 3000  
GGATAGTTGAACAACCTTCAAGAAGCTGAGAGAAGTTTGTTCCTCAATTTACAAGTATTTTG 2941

Qy 473 GC-----CGCAGCC---TCGGCC-----TCTGCCTCAG--  
CC 499

| | | | | | | | | | | | | | | |

Db 2940  
ACATATAGATAAAACAAAAGCAAACAGTTAAACCTTAAAGATCATCTGAATAAGATCC 2881

Qy 500 GCGGCG-----  
TCGTGCGCCGCGGGGGGCGGCGCGGAGGCGCTGGAGCTGCTGGAGC 551

| | | | | | | | | | | | | | | |

Db 2880 -TGACAATTATAATTTTACATCCATGTG----AATTTCAA---  
GCAATTGTTAATGGGA 2829

Qy 552 ACTGC--GGC-  
GTGTGCAGAGAGCGCCTGCGACCCGAGAGGGAGCCCCGCCTG----- 601

| | | | | | | | | | | | | | | |

Db 2828 CCAGCAGGGCTGCATTAAGAAAACCACTTTTCACTGATCTCTC-  
CCCCACATATTTTTAA 2770

Qy 602 -----CTGCCCTGTT-----TGCA-----  
CTCGGCCTGTAGTGCCTGCTT 636

| | | | | | | | | | | | | | | |

Db 2769 TTTGTCTTGCTTTGTTTATTTTGGTTATGCAAGTCCTTTCTCTTCATGAA--  
ACAAGTGT 2712

```

Qy          637 AGGGCCC-----GC-----GGCCCCCGC-
CGCCGC----- 660
      | ||| |   ||           |||||       || |
Db          2711
AAGGCTCTAAAGCTAAAATAATAGTTATTTTTGTGGGCCCAATAGCTACTTTTGAATT 2652

Qy          661 -----CAACAGCTCGGGGGACGGCGGGGCGGCGGGGCGACGGC--
ACCGTG 703
                        || || |||||    || |   | ||| | |||
||
Db          2651 TCTTCTTTTAGTATATCTCAAATCTGGGGAACATGGAAC--
TTGAAGACTCCTAACCATG 2594

Qy          704 G-----TGG-----ACTGTCCCGTGTGC-----
AAGC 725
                |||              || | || | | |
|||
Db          2593
AAGCATTTGGAAAAATACATATCATTCACTTTTCACAGAACCATTTTCTTAAAAATAAGA 2534

Qy          726 AACAGT----GCTTCTC---
CAAAGACATCGTGGAGAATTATTT----- 762
      || |   | ||| |   ||     ||| | || |||
Db          2533
GGCAATATCCAGATTCACATGCATGTTTCATAATAAAGCTTTGTTTTAAACAATCCACA 2474

Qy          763 CATGCGTGATAGTGGCAGC----AAGGCTGCCACCGACGCCCAGGATGCG-----
AAC-- 811
      | || | || | |||| |   || | || | || || || |   |||
Db          2473 CCAGCATTATTTT--CAGCTTAATATTTTGGCCCCAAC-
CCAAGAATTCAGGTATAACAT 2417

Qy          812 -----CAGTGCTGCACTAGCTGTGAGGATA-----
ATGCCCCAGCCACCAG 852
                | || ||||    || |||| |   ||||    |||
|
Db          2416
TTAATTTTCATCTGTAATGCATATATTGGAAGGACAAAATATATATGCAAATAACACTGG 2357

Qy          853
CTACTGTGTGGAGTGCTCGGAGCCTCTGTGTGAGACCTGTGTAGAGGCGCACCGCGGGT 912
      | |||    || |   ||| |   || | |   |||    || |
Db          2356 AAAATGT-----TGTTT----CCTATACAAGTGATC----AAGAAAAAAACAA--
AGAA 2313

Qy          913 GAAGTACACCAAGGACCATA-----CTG-----
TGCGCTCTACTGGGCCAGCCAA 957
      ||| | ||| |   | ||         |||       | | | || | |||
|||
Db          2312
AAAGAAAACCATAGCACTAAGTTTGCTGTAGTGAAAATATGGTTAACGGTGCCGTGCAA 2253

Qy          958 GTCTCGGGATGGTG-
AACGTACTGTCTATTGCAACGTACACAAGCATGAACCCCTTGTGC 1016
      | |   || || || ||| | ||||| || |   || |||||   |
||
Db          2252 AATTAGATTTGTTGAAAAGTAGT-TCTATTACAGGGAGCAAAAGCAAAGA-----
AGC 2201

```

Qy 1017 TGTTTTGTGAG-AGCT-----  
GTGATACTCTCACCTGCCGAGACTGCCAGCTCA 1064  
| | | | | | | | | | | | | | | | | | | | | |

Db 2200 AAGTTTGTGGGCAACTCGGAAGAGGGGATCATATTCTCATTT-  
CCTTAATTGTAATTTAA 2142

Qy 1065 ATGCCACAAGGACCACCAGTACCAGTTCTTAGAGGATGC-----  
AGTGAGGAACCAGCG 1119  
| | | | | | | | | | | | | | | | | | | | | |

Db 2141 ATAATCATTC--TCCATAATTTCTCTTTC-TAGAGCTTTCTTCTTTGTATGCTATCA-  
CG 2086

Qy 1120 CAAG-----CTCCTGGCCTCACTGGTGAAGC-----  
GCCT----- 1149  
| | | | | | | | | | | | | | | | | | | | | |

Db 2085 TAAGGTAGTACTATTTTACCT-  
TAAAAAATGGAAAGACAAATTTTACGCTAAGAATGATG 2027

Qy 1150 -----TGGG--GACAA--ACATGCAACATTGC---AGAAGAGCAC-----  
CAAGGAG-G 1190  
| | | | | | | | | | | | | | | | | | | | | |

Db 2026  
TATTCTGAGTTGGCAATTACTTAAAACAATGAGAGAGTAAAACACATCAAACCTTAAAGTG 1967

Qy 1191 TTCGC----AGCTCAATCCGCCAGGTGTCTG--ACGTACAGAAGCGTGT-----  
GCAAG 1238  
| | | | | | | | | | | | | | | | | | | | | |

Db 1966  
TTTACTTTTTTGAACATTAAATAAATGTCAGGTAAATACAGAAAAATATATAATCACTAG 1907

Qy 1239 TGGATGTCAAGATGGCCATCC-----  
TGCAGATCATGAAGGAGCTGAATAAGCGGGGCC 1292  
| | | | | | | | | | | | | | | | | | | | | |

Db 1906 TTCTCAGCATTTTATCAATCCCTTTGTTTCTCTTCTTCTAGAAG----  
ATTCTATGAGCA 1851

Qy 1293  
GTGTGCTGGTCAATGATGCCCAGAAGGTGACTGAGGGGCAGCAGGAGCGCCTGGAGC--G 1350  
| | | | | | | | | | | | | | | | | | | | | |

Db 1850 TTATGTTGCTCC-----GATCAAAAGTAACCTCA----CTACTCAAATACC---  
ATCATA 1803

Qy 1351 GCAGCACTGGACCATGACCAAGATCCAGAAGCACCAGGAGCACA----  
TTCTGCGCTTTG 1406  
| | | | | | | | | | | | | | | | | | | | | |

Db 1802  
GCTTCAATGTGCATTATAGTGATTTTCTAGTATTACACTCAAATCTTTTCTAGTGTGCTATA 1743

Qy 1407 CC--TCTTGGGCTCTGGAG-AGTGACAACAACACAGCCCTTTT---  
GCTTTCTAAGAAGT 1460  
| | | | | | | | | | | | | | | | | | | | | |

Db 1742 CATTTATTAAGCCATAAAGTTATGAAACC--  
CTCAGCTCTTGTGGAGAGATCTGGGCAGA 1685

```

Qy          1461  TGA TCTACTTC CAGCTG-----CACCGGGCCCTCA--
AGATGATTGTGGATCCCG 1508
      |  |||      ||  |      |||      |||      ||  |||||
|
Db          1684
ATTTATACAAGAAGAAGTTTAATTTATCACTTAAAAATCATCTCATAATTGTGGTAACAG 1625

Qy          1509  -----TGGAGCCACATGGCGAGATGAAGTTTCAGTGGGACCTCAATGC-
CTGGACCA 1559
      |  |||      |||      |  ||  |||      |||      |||      ||  ||  ||  |
||
Db          1624  ATTTTAAAGTAACCCTTTGG---
AAAAAATTTTACGTGATACCCAAAGGCACTAGTTCA 1568

Qy          1560  -----AGAGTG-----CCGAGGCCTTTG-----
GC----- 1579
      |  |||      |  ||  |||  |||      ||

Db          1567
CATAAGGGGTGTGGCTGAAAAAGCAAAACAAAGCCATTGTGTAAGTAAAGAGCACACAAA 1508

Qy          1580  --AAGATTGTGGCAGAGCGTCCTG----GCACTAA-----CTCAACA-
GGCCCTGCAC 1625
      |||  |  |  |  |  ||||      ||  |||      ||  ||  |  |||  ||

|
Db          1507
AAAAGGATATTAAAAGGAAACCTGTTAAGCTTTAAAGTTATTCTAAAAATGGCACTTTTC 1448

Qy          1626  CCATGG----
CCCCCTCAAGAGCCCCAGGG----- 1651
      |  ||      |  |||  ||  |  |

Db          1447
ACGTTGGTATAAAATGAAAGTGCTTTAAGATGAAATTTTTATGTATTTTTTTAAAGCTGA 1388

Qy          1652  -----CCCCTGAGCAAGCAGGG-----
CTCTGGCAGCAGCCAGCCCATGG 1691
      |||||  |  |||      |  |||  ||  |  |  |||

|
Db          1387
TTTTTAACCCCTGAAAAATAGGGGGTTATAACAAGAACACTGATAGACTCTAACTCATAG 1328

Qy          1692  AGG-----TG---
CAGGAAGGCTATGGCTTTGGGTC----- 1719
      ||      ||  |  ||  |||  ||  |  ||  |||

Db          1327  CGGCAATAAGTAGTGGATGTCACTAAATGCTCTG--
TGTGTGTCCTTTATTTTTTAGTAT 1270

Qy          1720  -----AGGAGATGATC---
CCTACTCAAGTGCAGAGCCCCATGTGTCAGGTGTG----- 1765
      |  |||      ||  ||  |||  |  ||  |  |||  ||  ||  |  ||

Db          1269  TTTTAATGTTGATAGACTTTGCTTTATCTA--
TCTGTGTATCATTAGTGAGATTTGCTTTT 1212

Qy          1766  -----AAACGGTCCCGCTCA-----
GGTGAGGGCGAGGTGAGCGG 1800
      ||  ||  ||  |||||      |||  |  |  |  |||

Db          1211  CAATTCTTTACTAGAAAGTTACAGCTCATTTAAAATAGCTGGTAAATAC--
AGAAAGCAT 1154

Qy          1801  CCTTATGC-GCAAGGT--GCCAC-GAGTGAGCCTTGAACGCCTGGAC-----

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CTG 1846  
 ||  
 Db 1153  
 AAATATACAGTAAGTTTAAACACTGATTGTACTAAATGCAACAATACAAAGAAGCAAATG 1094  
 Qy 1847 GACCTCACA-GCTGACAGCCAGCCACCCGTCTTCAA---GGTCTTCCCA---  
 GGCAGTAC 1899  
 ||  
 ||  
 Db 1093 GAACACAAATGGTAACA-  
 CAATAAAACTGTATTACATTTGTGCTTCAAATATTACAATA- 1036  
 Qy 1900 CACTGAGGACTACA-ACCTTATTGTTATTGAACGTGGCGC-  
 TGCCGCTGCAGCTACCGGC 1957  
 ||  
 ||  
 Db 1035 CATTATATACAATAGTCCAAAATAAACAT-  
 CTCATGCCAAGTGACACAAAAACGAATAGC 977  
 Qy 1958 CAGCCAGGGACTGCGCCTGCAGGAACC--CCTGGTGCC-----  
 CCACCCC 2000  
 ||  
 |  
 Db 976  
 AAGCAAAAAATCCAGCCATATGTACATTACTTTTTTCTTTAATAATAAACATTCAACTC 917  
 Qy 2001 TG-  
 GCTGGCATGGCCATTGTCAAGGAGGAGGAGACGGAGGCTGCCATTGGAGCCCCTCCT 2059  
 ||  
 |  
 Db 916 TGAAGTGG---GGCAATT-TCACTAC-----ATACAGATGCAGTC-----  
 CGCCTTTT 873  
 Qy 2060  
 ACTGCCACTGAGGGCCCTGAGACCAAACCTGTGCTTATGGCTCTTGCGGAGGGTCCTGGT 2119  
 ||  
 Db 872 ATTCCATATAACCATCCTG---CCTTCCTATATCTAC-  
 GCTATTCACTAGGTTCCT--- 821  
 Qy 2120 GCTGAGGGTCCCCGCCTGGCCTCACCTAGTGGCAGCACCA-----  
 GC 2161  
 ||  
 ||  
 Db 820 -----GTGTCAATTCTT---ATGTACATGTGG-  
 AGCAAAAAAGATAAAAGAATGTAGTGC 770  
 Qy 2162 TCAGGG--CTGGAGGTGGTGGCTCCTGAGGGTACCTCAGC--  
 CCCAGGTGGTGGCCCGGG 2217  
 ||  
 Db 769 TCTGTATTCTTAATGGGGTG---ATGTTGATAGATCAGCGAACCTGG-GGT-  
 GCAT--- 719  
 Qy 2218 AACCTTGATGACAGTGCCACCATTTGCCGT-  
 GTCTGCCAGAAGCCAGGCGATCTGGTTA 2276  
 ||  
 ||  
 Db 718 AACCTTCTTTTATTAAACCTTCCT---CGTAGTCCGTCTG--GCAAAG-  
 GATCATGTTA 666

```

2277 TGTGCAACAGT--GTGAGTTTTGTTTCACCTGGA-----CTG-
TCACCTGCCGGCCCT 2328
| | | | | | | | | | | | | | | | | | | | | |
|
Db          665 T-----
TCTTTAGGAAAAATTGTCTCCAACACAAAATCTCTGATTACAAAGCTGACAT 612

Qy          2329 GCAGGATGTACCAG--GGGAGGAGTGAGCT--
GCTCACTCTGCCATGTGCTCCCTGACC 2384
| | | | | | | | | | | | | | | | | | | | | |
|
Db          611 GCAAAGCAGTCCAGGTGGTAAACATTGTCTTGGCACGCATCACCAT---
CTCAAAGGC- 556

Qy          2385 TGAAGGAGGAGGATGGCAGCCTCAGCCTG-
GATGGTGCAGACAGCACTGGCGTGGTGGCC 2443
| | | | | | | | | | | | | | | | | | | | | |
|
Db          555 --AGGGATGAGCTT----ACTACAGGCAGCGCAGTTTCCCGTTACAC---
CAAAGAGCCT 505

Qy          2444 AAGCTCTCACCAGCCAACCAGCGGAAATG-TGAGC----
GTGTACTGCTGGCCCTATTCT 2498
| | | | | | | | | | | | | | | | | | | | | |
|
Db          504 CAGATAGTCTCTGCGA--CAAAGGATAAGATTAGCTTTTAGTGTACAG--
GG-----T 457

Qy          2499 GTCACGAACCCTGCCGCCCC-----CTGCATCAGCTGGCTACCGACT--
CCACCTTC- 2548
| | | | | | | | | | | | | | | | | | | | | |
| | | |
Db          456 G----GAGCCC-
ACCTCCCCCAAGCGACAGTCACAGCAGGCACACTTCAGGCAGTCTTCA 402

Qy          2549
TCCCTGGACCAGCCCGGTGGCACCCTGGATCTGACCCTGATCCGTGCCCGCCTCCAGGAG 2608
| | | | | | | | | | | | | | | | | | | | | |
|
Db          401 TGCCAGTATTTGTCCAGTG---CCTTTAGAAGATACCGGTCCTTGAT--
CTTTCGGTTG 348

Qy          2609 AAGTTGTCACCTCCCTACAGCTCCCCACAGGAGTTTGCCCAGGATGTGGGCC---
GCATG 2665
| | | | | | | | | | | | | | | | | | | | | |
| |
Db          347 CAGCCAGCACAACTTTTCGGCT-----
TGGTGTCTGGCTGGACTGAGAGCATTTGTATA 294

Qy          2666 TTCAAGCAATTCAAC-----
AAGTTAACTGAGGACAAGGCAGACGTGCAGTCCA 2714
| | | | | | | | | | | | | | | | | | | | | |
| |
Db          293 CCAAAACTTTTCTCCTTTTTTCTGCATGAGTTGACTTAGG-CGTGTCTGAGTTGCAG--
CA 237

Qy          2715
TCATCGGCCTGCAGCGCTTCTTCGAGACGCGCATGAACGAGGCCTTCGGTGACACCAAG- 2773
| | | | | | | | | | | | | | | | | | | | | |
|
```



Db 236 GCTTC-GCATTGAGCAC-----C-  
AAACCCAAAGGTAGAAGTAGAAGGGGGTCTCCTTGA 184

Qy 2774 -TTCTCTGCTGTG-----CTGGT--GGAGC---  
CCCCGCCGATGAGCCTGCCTGGTGCTG 2822

Db 183 TTTTCGCTTAAGTGTGGACCTGGTGCGCAGCCTACACCGCCGAGGA--  
CCGACTATTG--- 129

Qy 2823 GCCTGAGTTCCC---AGGAGC-TGTCTG-GTGGC-  
CCTGGTGATGGCCCCTGAGGCTGGA 2876

Db 128 ---TGAAGCCACTTTGGGAGCGGGTCGGAGTGGCGGCAGGGGGTGGGGGAAG-  
GGATGAG 73

Qy 2877 GCCCCCATGGCCAGCCCAGCCT-  
GGCTCTGTTCTCTGTCTGTCACCCCATCCCCACTCC 2935

Db 72 GAC-----GGCCAGACAAGACAGGGCGC-----ACACACGGAGCCC-  
CTCG 33

Qy 2936 CCTGGTGGCCTGACTCCCACTCCCTGGTGGCCCCATCCCCCAG 2978

Db 32 CAGTGTG-----CAAAATGATGG-CGAATCCAGTAG 3

#### RESULT 5

US-10-478-914-61

; Sequence 61, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-255226

; PRIOR FILING DATE: 2001-08-24

; NUMBER OF SEQ ID NOS: 417

; SOFTWARE: PatentIn version 3.2

; SEQ ID NO 61

; LENGTH: 2437

; TYPE: DNA

; ORGANISM: Homo sapiens

US-10-478-914-61

Query Match 31.8%; Score 6214; DB 1; Length 2437;  
Best Local Similarity 44.4%; Pred. No. 0;  
Matches 1418; Conservative 0; Mismatches 870; Indels 906;  
Gaps 202;

Qy 8 GGGCCGGCGGCGGAGGCCGGGCCGCGGAG--  
CCAGGAGTGACTAGCAGCAGTTGGCCGTG 65

Db 32 CAGTGTG-----CAAAATGATGG-CGAATCCAGTAG 3

Db 1 GTTACTTCTGC--TCTAAAAGCTGCGGAATTCC-----TCGAGCA-CTGTTGGCC-  
TA 49

Qy 66 CCGTAGCAGCGTCCCGCGCGCGGCGGGCAGCGGC-  
CCAGGAGGCGCGTGGTGC GGGTTTC 124  
| | | | | | | | | | | | | | | | | | | | | |

Db 50 CTG----GGTGTACTGTG-GAGACTGTCAAAGTCTCCCGGAGCC-----  
CAATTTCC 96

Qy 125 GCGGCGG-----  
CTGAGGAAGAAGCGCGGGCGGCGCCTTCGGGAGGCGAGCAGGCAGC 178  
| | | | | | | | | | | | | | | | | | | | | |

Db 97 GGAAGCGGTGAGTTCTGA--AAGAAGTTC---CTGCACCGTAGTTTCCCAAGT---  
CTGC 148

Qy 179 AGTTGGCCGTGCCGTAGCAGCGTCCCGCGCGCGGCGGGCAGCGGCCAG-  
GAGGCGCGTG 237  
| | | | | | | | | | | | | | | | | | | | | |

Db 149 GAAT-CCCAACCAATG--AGCGCCTCGGGCGT-  
ACTGTCCTTTACCCAGCAAGGATGGGA 204

Qy 238 GC-  
GGCGCTCGGCCTCGCGGCGGCGGCGGCGGCGGCCAGCAGTTGGCGGCGAGCGC 296  
| | | | | | | | | | | | | | | | | | | | | |

Db 205 GCAGGTGCT-GGCCAAAGTGAAACG-----GGCTGTGGTTTACCTG--  
GACGCCGCTGC 256

Qy 297 GTC-  
TGCGCCTGCGCGGCGGGCCCCGCGCCCCCTCTCCCCCCTGGGCGCCCCCGGCGGC 355  
| | | | | | | | | | | | | | | | | | | | | |

Db 257 GCCGAGAGCCTGCACTGGGG---CTGCG-----GATCCACCCGT-----  
CTCCTGGAGGC 303

Qy 356  
GTGTGAATGGCGGCCTCCGCGGCGGCAGCCTCGGCAGCAGCGGCCTCGGCCGCTCTGGC 415  
| | | | | | | | | | | | | | | | | | | | | |

Db 304 G-GTG---GGGGGCC-----CTGACT-----  
GTCACCTGCGAG 332

Qy 416  
AGCCCCGGGCCCCGGGCGAGGGCTCCGCTGGCGGCGAAAAGCGCTCCACCGCCCCCTTCGGCC 475  
| | | | | | | | | | | | | | | | | | | | | |

Db 333 AGTTTCAGCCC-----GACGCAATTGGTGGTG---GAGCCAAGCAGCCC--  
AAGGCA 379

Qy 476 GCAGCCTCGGC--  
CTCTGCCTCAGCCGCGGCGTCTGCGCCGCGGGGGCGGCGCCGAGG 533  
| | | | | | | | | | | | | | | | | | | | | |

Db 380 G-TGTTTGTGCTGAGCTGCCT--GCTGAAAGGCCG--GACCGTGGAGATC--  
CTACGGGA 432

Qy 534 CGCTGGAGCTGCTGGAG-CACTGC--  
GGCGTGTGCAGAGAGCGCCTGCGACCCGAGAGGG 590  
| | | | | | | | | | | | | | | | | | | | | |

Db 433 CATC--ATCTGCCGCAGTCACTTCCAGTATTGTGTGGTGGTCAC-----  
 AACCGTGAG-- 483

Qy 591  
 AGCCCCGCCTGCTGCCCTGTTTGCCTCGGCCTGTAGTGCCTGCTTAGGGCCCGCGGCC 650  
 || | ||| || | | | | | | | | | || |||||

Db 484 ----CCAC--GCTGTCC----ACCTCACAGCTAATCATGTC-----  
 CCAGCGGCGG 524

Qy 651  
 CCGCCGCCGCAACAGCTCGGGGGACGGCGGGGGCGGCGGGCGACGGCACCGTGGTGGACT 710  
 | || || | | | | | | | | |

Db 525 CAGCGGCC-----  
 GAGATGGAGGGGCAGCAG----- 550

Qy 711  
 GTCCCGTGTGCAAGCAACAGTGCTTCTCCAAAGACATCGTGGAGAATTATTTTCATGCGTG 770  
 || |||| | |||| | | | ||||| ||

|||  
 Db 551 --CCGGTGTTCGAGCAGCTG-----GAGGAGAAG-----  
 CTGTGTG 584

Qy 771 ATAG---TGGCAGCAAG-GCTGCCACCGACGCCAGGATGCGAACCA-  
 GTGCTGCACTAG 825  
 | | |||| || | || | || | || | || | || | || |

|  
 Db 585 AATGGATGGGCAACATGAACTAC-----ACGGCC--  
 GAGGTGTTCCATGTCCCATTATTG 637

Qy 826  
 CTGTGAGGATAATGCCCCAGCCACCAGCTACTGTGTGGAGTGCTCGGAGCCTCTGTGTGA 885  
 || ||||| || | |||| | | || ||

Db 638 CT-----TGCCCC-----TGT---TGCTC---  
 CCCACTTTG--- 662

Qy 886  
 GACCTGTGTAGAGGCGCACCAGCGGGTGAAGTACACCAAGGACCATACTGTGCGCTCTAC 945  
 ||| || | |||| | | | || | || | || | ||

|  
 Db 663 --CCT-TG-----ACTCCAGCTTTTGCA-----TCC---  
 CTTTTCCCACTGC 698

Qy 946 TGGGCCAGCCAAGTCTCGGGATGGTGAACGTACTGTCTATTGC---  
 AACGTACAC----A 998  
 | || || | ||| || | || | || | || | || | ||

|  
 Db 699 T--ACC--CCA-----GGAT-  
 GTGCACCTCCTTAATAGCGCCGACCGGACAAGAGGA 746

Qy 999  
 AGCATGAACCCCTTGTGCTGTTTTGTGAGAGCTGTGATACTCTCACCTGCCGAGACTGCC 1058  
 ||| | | || | | | || | || | ||

||  
 Db 747 AGCTGGGAAGCC-----TGGGTGATGTGG---ACTCCACTAC-----  
 GCT 783

Qy 1059  
 AGCTCAATGCCACAAGGACCACCAGTACCAGTTCTTAGAGGATGCAGTGAGGAACCAGC 1118  
 | | |||| | | | ||| || ||||

Db 784 AAC-----CCCA----GAGCTGCTGCTGCAGATC-----



AG 1178

Qy 1644  
CCCCAGGGCCCCTGAGCAAGCAGGGCTCTGGCAGCAGCCAGCCCATGGAGGTGCAGGAAG 1703  
||| ||| | ||| | | || | ||| |||  
Db 1179 --CCAAAGCCCTATGGGAAGCTTTACT----  
GAACACTAAGCACAAAGAGG----- 1223

Qy 1704  
GCTATGGCTTTGGGTGAGGAGATGATCCCTACTCAAGTGCAGAGCCCCATGTGTCAGGTG 1763  
|| | ||| |||| | || | ||| ||  
|||  
Db 1224 -----CA-GTGATGG-----AAGTTCGGAGAC-----  
ATCTAGTG 1252

Qy 1764  
TGAAACGGTCCCGCTCAGGTGAGGGCGAGGTGAGCGGCCTTATGCGCAAGGTGCCACGAG 1823  
||| ||| | || ||| | | ||| | | | | |  
|  
Db 1253 -GAAGCGG-CAAGC-----AGAGAAAACCTGCC--  
AATCAAGATGAGTATGGGG 1297

Qy 1824  
TGAGCCTTGAACGCCTGGACCTGGACCTCACAGCTGACAGCCAGCCACCCGTCTTCAAGG 1883  
||| | || ||| | |||| | | | |||  
|||||||  
Db 1298 AGAGTC----ACACCGGGAC----AGCTCATGTCCTATATTCAGC-----  
TCTTCAAGA 1343

Qy 1884 TCTTC--CCAGGC-----  
AGTACCACTGAGGACTACAACCTTATTGTTATTGAACGTGGC 1936  
| | | | | | | | | | | | | | | | | |  
||  
Db 1344 ACAACCTCAAAGCTCTAATGAATCATTGTGGCCT-CCTCCAGCTTG-  
GACTGGCCACAGC 1401

Qy 1937 GCTGCCGCTGCAGCTAC--CGGCCAGCCA---  
GGGACTGCGCCTGCAGGAACCCCTGGT- 1990  
| ||| | | | | | | | |||| | | | | | |  
Db 1402 TCAAACGTTGAAACACCCACAGACTGCCAAGTGGGAC--AACTTTCTGG--  
CTTTTGAAA 1457

Qy 1991 -GCCCCACC--CCTGGC--TGGCATGGC--  
CATTGTCAAGGAGGAGGAGACGGAGGCTGC 2043  
|| || | | || ||| | | |||| | | | |  
|||||  
Db 1458  
GGCTCCTTCTTCAGAGCATTGGGGAGTCAGCAATGTCCGTTGTGTTAAATCAGCTGCTGC 1517

Qy 2044 CATTG---GAGCC----CCTCCTACTGCCACTGAGG-----GCCCTGAG-----  
ACCAA 2085  
| || |||| | | | ||| |||| ||||| |  
|  
Db 1518  
CCATGATTAAGCCTGTAACCCAGAGAACCAACGAGGACTACAGCCCTGAGGAACTGCTGA 1577

Qy 2086 ACCTGTGCTTATGGCTCTTGCAGGAGGGTCCTGGTGCT-  
GAGGGTCCCCGCCTGGCCTCAC 2144  
||| | ||| | | | ||| || ||| | | | | |  
Db 1578 TCCTTCTCATATATATTT-----

ATTCTGTCACTGGAGAGCTCACGGTAGACAAAGA 1629

Qy 2145 CTAGTG-GCAGCACCAGCTCAGGGC-  
TGGAGGTGGTGGCTCCTGAGGGTACCTCAGCCCC 2202

Db 1630 CCTGTGTGAAGCAGAAGAAAAAGTCAAGAAAGCATTGGCTC----AGGT-  
CTTCTG---- 1680

Qy 2203  
AGGTGGTGGCCCGGGAACCCTGGATGACAGTGCCACCATTGCGGTGTCTGCCAGAAGCC 2262

Db 1681 -----TGAGGAATCTGGAT-----TGTCACC-TTTG-----  
CTGCAAAAATT 1717

Qy 2263 AGGCGATCTGGTTATGTGCAACCAGTGTGAGTTTT---GTTTCCA-----CC-  
TGGACT 2312

Db 1718 A--  
CGGACTGGGACTCTTCAATTAATCTGACATTTACAAATCCAAAATTGCCGTGGATG 1775

Qy 2313  
GTCACCTGCCGGCCCTGCAGGATGTACCAGGGGAGGAGTGGAGCTGCTCACTCTGCCATG 2372

Db 1776 AACTCTTTACTTCACTTCGGGATATTGC-----TGGAGCT-  
CGGAGTCT----- 1818

Qy 2373 TGCTCCCTGACCTGAAGGAGGAGATGGCAGCCTCAGCCTGGATG-  
GTGCAGACAGCACT 2431

||  
Db 1819 -----CCTGAA-----ACAGTTTAAGTCTGTATATGTTC-----  
CT 1849

Qy 2432 GG---CGTGGTGGCCAAGC-TCTCACCAGCCAACCAGCGGAAATGT--  
GAGCGTGTACT 2484

||  
Db 1850 GGAAATCATACCCACCAGGCATCTTATAAGCC-----  
ATTGTTGAAGCAAGTTGT 1899

Qy 2485 GCTGGCCCTATTCTGTACGAAC--CCTGCCGCC----  
CCCTGCATCAGCTGGCTACCGA 2538

|  
Db 1900  
GGAGGAAATATTTTCATCCCAGAGGCCAGATTCCGTTGATATTGAACACATGTCTTCAGG 1959

Qy 2539 CTCCACC-  
TTCTCCCTGGACCAGCCCGGTGGCACCCCTGGATCTGACCCTGATCCGTGCC 2597

||  
Db 1960 CCTCACTGATCTCCTTAAACT---GGATTTAGCATGTTTCATGAAGGTGAGCCGG--  
CC 2013

Qy 2598  
GCCTCCAGGAGAAGTTGTACCTCCCTACAGCTCCCCACAGGAGTTTGCCAGGATGTGG 2657

||  
Db 2014 TCATCCTAG-----TGACTACCCCTCCTGATCCTC-----TTTGTGGTAGGTG-  
GG 2059

Qy 2658  
GCCGCATGTTCAAGCAATTCAACAAGTTAACTGAGGACAAGGCAGACGTGCAGTCCATCA 2717  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 2060 GTCACAGTCTCTG-----AAGTGAA-AATGGTCAAAG--ATCTTGTTGG--  
CATCG 2104

Qy 2718 TCG--GCCTGCAGCGCT--  
TCTTCGAGACGCGCATGAACGAGGCCTTCGGTGACACCAAG 2773  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2105 TTGAAGCCAGGAACCCAGGTAATCGTGCTGTCCA--CACGACTCCT--  
GAAGCCACTTAA 2160

Qy 2774 TTCTCTGCTGTGCTGGTG-GAGCCCCCG-  
CCGATGAGCCTGCCTGGTGCTGGCCTGAGTT 2831  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2161 CATTG--CTGAGCTGTTATTTGCAACTGACCGA-----CTGC---  
ATCCAGACCTTGGCT 2210

Qy 2832 CCCAGGAGCTGTCTGGTGGCCCTGGTGAT--GGCC-  
CCTGAGGCTGGAGCCCCCATGGCC 2888  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 2211 TCT--GAGCATCC-----  
GCTAAGAAGATAAGACCTACTCAAGCTGGAAATGCCGATGCA 2263

Qy 2889  
AGCCCAGCCTGGCTCTGTTCTCTGTCTGTACCCCATCCCCACTCCCCTGGTGGCCTGA 2948  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2264 A-----TTTTCTGCCACCACTCCAAATACTC-CTCCAC----  
AACCAGC 2302

Qy 2949 CTCCCCTCCCTGGTGGCCCCA-----TCCCCCAG-----TTCCT-  
CAC 2986  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2303  
GTCCCTGTCTACTAATTGCGAGAATGATGGAATTCTGCCTGAAGGGTCTTGATACCTACTC 2362

Qy 2987 GATATGGTT-TTTACTT-----  
CTGTGGATTTAATAAAAAAACTTCACCAGTTCAAAA 3039  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2363  
AGTGAGGTACTTTGCTTGGATTGCTGTGATTCTTAAAAAAGGCCACAT 2422

Qy 3040 AAAAAAAAAAAAAA 3053  
| |  
Db 2423 GTGCTCGAGCTGCA 2436

RESULT 6  
US-10-478-914-61/c  
; Sequence 61, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 61  
; LENGTH: 2437  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-61

Query Match 31.2%; Score 6092.5; DB 1; Length 2437;  
Best Local Similarity 43.7%; Pred. No. 0;  
Matches 1392; Conservative 0; Mismatches 879; Indels 911;  
Gaps 208;

Qy 12 CGGCGGCGGAGGCCGGGC-CGCGGAGCCAGGAGT-----  
GACTAGCAGCAG 56

| ||| | || || | | || | | || |

||||

Db 2437 CTGCAGC-----

TCGAGCACATGTGGCCTTTTTTTTTTTTTTTTAAAGAATCACAGCAA 2383

Qy 57 TTGGCCGTGCCGTAGCAGCGTCCCGCGCGCGGCGGGCAGC--  
GGCCCAGGAGGCGCGTGG 114

| | || || | || | | | | || | || | |

Db 2382 T-----CC-AAGCAAAGTACCTCACTGAGTAGGTATCAAGACCCTTCAGGC-

AGAAT 2333

Qy 115 TCGGGTTTCGGCGGCGGCTGAGGAAGAAGCGC-----  
GGGCGGCGCCTTCGGGAGGCG 168

| | || | | | | || | || | | || |

|

Db 2332 TCCATCATTC-TCGCAATTAGTGACAGGGACGCTGGTTGTGGAGGAGTATT----

TGGAG 2278

Qy 169 AGCAGGCAGCAGTTGGCCGTGCCGTAGCAGCG--TCCCGCGCGCGGCGGGC--  
AGCGGCC 224

| |||| | || | | || || | | || | |

|

Db 2277 TGGTGGCAGAAAATTGC-----

ATCGGCATTTCCAGCTTGAGTAGGTCTTATCTTCT 2226

Qy 225 CAGGAGGCGCGTGGCGGCGCTCGGCCTCGCGGCGG-CGG-CGGCGGC----  
AGCGGCCCA 278

| | | | | | | | | | | | | | | |

||

Db 2225 TAGCGGATGCTCAGAAGC-

CAAGGTCTGGATGCAGTCGGTCAGTTGCAAATAACAGCTCA 2167

Qy 279 GCAGT-----TGGCGGCGAGCG-  
CGTCTGCGCCTGCGCGGCGGGCCCCGCGCCCCT--C 329



| | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 2166 GGAATGTTAAGTGGCTTCAGGAGTCGTGTG-GACAGCACGAT--  
 TACCTGGGTTCTTGGC 2110  
  
 Qy 330  
 CTCCTCCCCCTGGGCGCCCCCGGCGGCGTGTGAATGGCGGCCTCCGCGGCGGCAGCCTCGG 389  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 2109 TTCAAC-----GATGCCACAAG-----ATCTTTGAC--CATTTTC-----  
 ACTTCAG 2070  
  
 Qy 390  
 CAGCAGCGGCCTCGGCCCGCCTCTGGCAGCCCCGGGCCCGGGCGAGGGCTCCGCTGGCGGCG 449  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 2069 AGACTGTGACC----  
 CCACCTACCACAAAGAGGATCAGGAGGGGGTAGTCACTAG----G 2018  
  
 Qy 450  
 AAAAGCGCTCCACCGCCCCCTTCGGCCGCGAGCCTCGGCCTCTGCCTCAGCCGCGGCGTCTGT 509  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 2017 ATGAG---GCCGGCTCACCTTCATGAACA-----TGCTAAATCC----  
 AGTTTT 1976  
  
 Qy 510 CGCCCGCGGGGGCGGCGCCGAGGCGCTGGAGC----  
 TGCTGGAGCACTGCGGCGTGTGC 565  
 | | | | | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1975 -----AAGGAGATCAG---TGAGGC-  
 CTGAAGACATGTGTTCAATATCAACGGAATCTG- 1926  
  
 Qy 566 AGAGAGCGCCTGCGACCCGAGAGGGAG-----  
 CCCC GCCTGCTGCCCTGTTTGC-- 614  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1925 -----GCCT----  
 CTCGGGATGAAATATTTCTCCACAACCTTGCTTCAACAATGGCTT 1877  
  
 Qy 615 --ACTCGGCCTGTAGTGCCTGCTTAGGGCCCCGCGGCCCCCGCCGCGCCAACAG-  
 CTCGG 671  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1876 ATAAGATGCCTGGTGGGTATGATTT---  
 CCAGGAACATATACAGACTTAAACTGTTTCAG 1820  
  
 Qy 672 GGGACGGCGGGGCGGCGGGCGACGGCACCGTGGTGGACTGTCCCG-  
 TGTGCAAGCAACAG 730  
 | | | | | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1819 GAGAC-----TC--CGAGCTCCAGC-----AATATCCCGAAGTG-AAGTAA-  
 AG 1780  
  
 Qy 731  
 TGCTTCTCCAAAGACATCGTGGAGAATTATTTTCATGCGTGATAGTGGCAGCAAGGCTGCC 790  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1779 AGTTCATCCACGGCAATTTTGG-----ATTT-----GTGA-  
 AATGTCAGATTAATTG-- 1734  
  
 Qy 791

ACCGACGCCCAGGATGCGAACCAGTGTGCTGCACTAGCTGTGAGGATAATGCCCCAGCCACC 850  
 || |||| | | ||| || | | | ||||  
 ||  
 Db 1733 -AAGAGTCCCAGTCCGTAATTTTTTGCAGCA-----  
 AAGGTGACAATCCAGATTCC 1684

Qy 851 AGCTACTGTGTGGAGTGTCTCGGAGCCTCTGTGTGAGACCTGTGTAGAGGC----  
 GCACCA 906  
 || | | | |||| || | | | | | |  
 |  
 Db 1683 T--CACAG-----AAGACCTGAGCCAATG-----CTTTCTTGA--  
 CTTTTTCTTCT 1642

Qy 907 GCGGGTGAAGTACACCAAGGAC----CATACTGTGCGCTCTACTGGGCCAGCC--  
 AAGTCT 961  
 || | ||| ||| | ||| ||| |||| | | | ||| |||  
 |  
 Db 1641 GC-----  
 TTCACACAGGTCTTTGTCTACCGTGAGCTCTCCAGTGACAGAATAAATAT 1590

Qy 962  
 CGGGATGGTGAACGTACTGTCTATTGCAACGTACACAAGCATGAACCCCTTGTGCTGTTT 1021  
 | ||| | | | | | | | | | | | | |  
 ||  
 Db 1589 ---ATATGAGAAGGATCAG-CAGT-----TCCTCAGGGCTGTAGTCCTCGT--  
 TGGTT 1543

Qy 1022 TGTGAGAGCTGTGATACTCTCACCTGCCGAGACTGCCAGCTCAATGCCCACAA--  
 GGAC-- 1078  
 ||| | ||| | | | | | |||| | | |||| ||||  
 Db 1542 -----CTCTGGGTTACAGGCTTAATCATGGGCAG--  
 CAGCTGATTTAACACAACGGACAT 1490

Qy 1079 -----CACCAGTACCAGTTCTTAGAGGATGCAGTGAGGAACC-----  
 AGCGCAAGCTCC 1127  
 || | ||| | || || || || || || || | || ||  
 Db 1489 TGCTGACTCC----CCAATGCTCTGAAGA-----  
 AGGAGCCTTTCAAAGCCAGAAAG 1441

Qy 1128 TGGCCTCACTGGTGAAGC--  
 GCCTTGGGGACAAACATGCAACATTGCAGAAGAGCACCAAG 1186  
 | | | |||| | || | || || | |||| || ||||  
 Db 1440 TTGTCCCACTTG---GCAGTCTGTGGG---TGTTTCAACGTT-----  
 TGAGCT----- 1399

Qy 1187  
 GAGGTTTCGCAGCTCAATCCGCCAGGTGTCTGACGTACAGAAGCGTGTGCAAGTGGATGTC 1246  
 | || || | ||| | ||| | || || || || ||  
 ||  
 Db 1398 -----GTGGC-CAGT---CCAAG---CTGGAG----GAGGC-----CACAAATGAT--  
 TC 1363

Qy 1247  
 AAGATGGCCATCCTGCAGATCATGAAGGAGCTGAATAAGCGGGGCCGTGTGCTGGTCAAT 1306  
 | | || | | | || |||| |||| |||| |||| ||||  
 Db 1362 ATTAGAGCTTTGAGGTTGTTCTTGAA-GAGCTGAATAT---  
 AGGACATGAGCTG----- 1313

Qy 1307 GATGCCCAGAAGGTGACTGAGGGGCAGCAGGAGCGCCTGGAGCGGCAG-----  
 CACTGGA 1361

Db 1312 ---TCCCGGT--GTGACTCT---  
CCCCATACTCATCTTGATTGGCAGGTTTTCTCTG-- 1264

Qy 1362 CCATGAC-CAAGATCCAGAAG-CACCAGGAGCACATTCTGCGCTTTGCCTC-  
TTGGGCTC 1418

Db 1263 -CTTGCCGCTTCCACTAGATGTCTCC---GAACTTCCATCAC--  
TGCCTCTTTGTGCTT 1211

Qy 1419 TGGAGAGTGACAACAACACAGCCCTTT-TGCTTT--CTAAGAAGT-----  
TGATC 1465

Db 1210 ---AGTGT-  
TCAGTAAAGCTTCCCATAGGGCTTTGGCTGTGGTGTCACTGAATTGTGAAA 1155

Qy 1466  
TACTTCCAGCTGCACCGGGCCCTCAAGATGATTGTGGATCCCGTGGAGCCACATGGCGAG 1525

Db 1154 GACAGCCTGGTGCA-----ACCACATTATAATTT-----CCTCCT--  
CAGT 1115

Qy 1526 ATGAAGTTTCAGTGGGACCTCAATGCCTG--  
GACCAAGAGTGCCGAGGCCCTTTGGCAAGA 1583

Db 1114 ATGGAG-TGCAGTGAG--CGCTAT-CATGTTAACCAT-----  
CACATCATTG----- 1071

Qy 1584 TTGTGGCAGAGCGTCCTGGCACTAACTCAACAGGCC--  
CTGCACCCATGGCCCCCTCCAAG 1641

Db 1070 -TGTGGCCTGGGAGCTGGGGAAGTGCTGAAATGATCTTCT-  
CTACTAAGTTGTCTCCATG 1013

Qy 1642 A-GCCCCAGGGCCCCCTGAGCAAG-  
CAGGGCTCTGGCAGCAGCCAGCCCATGGAGGTGCAG 1699

Db 1012 ATGTCCAAGTCTCCTGTGAGATCCAGGGTTCTGTCCACA--  
AAAACCA----- 966

Qy 1700  
GAAGGCTATGGCTTTGGGTCAGGAGATGATCCCTACTCAAGTGCAGAGCCCCATGTGTCA 1759

Db 965 -----CT-----GATG--CCCTGC-C---TGCAG-----CA---  
GTCT 942

Qy 1760  
GGTGTGAAACGGTCCCGCTCAGGTGAGGGCGAGGTGAGCGGCCTTATGCGCAAGGTGCCA 1819

Db 941 TCT-----TCCTGTTCT-TTGCAGG-----GGCATAATTGGCCAGAT-  
CCG 903

Qy 1820 CGAGTGAGCCTTGAACGCCTGGACCT--  
GGACCTCACAGCTGACAGCCAGCCACCCGT-C 1876



GCTCAC-----G 478

Qy 2393 GAGGATGGCAGCCTCAGCCTGGATGGTGCAGACAGCACTGGC--GTGGTGGCC---  
AAGC 2447

| | | | | | | | | | | | | | | | |

|  
Db 477 GTTG-TGACCACCACA-CAATACTGGAAGTGAAGTGC---  
GGCAGATGATGTCCCGTAGGA 423

Qy 2448 TCTCACCAG-  
CCAACCAGCGGAAATGTGAGCGTGTACTGCTGGCCCTATTCTGTACGAA 2506  
| | | | | | | | | | | | | | | | |

| |  
Db 422 TCTCCACGGTCCGGCCT-----TTCAGCAGG--CAGCTCAG-  
CACAAA 383

Qy 2507 CCCTGCCGCCCCCTGCATCAGCTGGCTACCGACTCCACCTTC-TC---  
CCTGGACCAGC- 2561  
| | | | | | | | | | | | | | | | |

|  
Db 382 CACTGCCTTGGGCTGCT-----TGGCT-  
CCACCACCAATTGCGTCGGGCTCGAACTCTCG 329

Qy 2562 CCGGTGGCACCCCTGGATCTGACCCTGATCCGTGCCCGCCTCCAGGAGA-  
AGTTGTACCT 2620  
| | | | | | | | | | | | | | | | |

| |  
Db 328 CAGGTGACAGTCAGG----GCCCC----CC---  
ACCGCCTCCAGGAGACGGGTGGATCC- 281

Qy 2621  
CCCTACAGCTCCCCACAGGAGTTTGCCAGGATGTGGGCCGCATGTTCAAGCAATTCAAC 2680  
| | | | | | | | | | | | | | | | |

Db 280 ----GCAG--CCCCAGTG-----CAGGCTCTCGGC-----  
GC----- 255

Qy 2681  
AAGTTAACTGAGGACAAGGCAGACGTGCAGTCCATCATCGGCCTGCAGCGCTTCTTCGAG 2740  
| | | | | | | | | | | | | | | | |

Db 254 -----AGGC-  
GGCGTCCAGGTAAACCACAGCCCGTTTCACTT----- 219

Qy 2741  
ACGCGCATGAACGAGGCCTTCGGTGACACCAAGTTCTCTGCTGTGCTGGTGGAGCCCCCG 2800  
| | | | | | | | | | | | | | | | |

| | |  
Db 218 -----TGGCC-----AGCACC-----TGCT-----  
CCCA 200

Qy 2801 CCGATGAGCCTGCCTGGTGCTGGCCTGAGTTCCC-  
AGGAGCTGTCTGGTGGCCCTGGTGA 2859  
| | | | | | | | | | | | | | | | |

Db 199 TC-----CTTGCTGGGTAAAGGACAGTACGCCCGAGGCGCT-----  
CATGGTTG 156

Qy 2860  
TGGCCCTGAGGCTGGAGCCCCCATGGCCAGCCAGCCTGGCTCTGTTCTCTGTCTCTGTC 2919  
| | | | | | | | | | | | | | | | |

| |  
Db 155 GGGATTGCGCAGACTTGGGAACTACGGT-----GCAGGAAGTTCTTTTCAGAAC--

TC 106

Qy 2920 ACCCCATCC--CCACT---CCCCTGGTGGC-----CTGACTCCC-----  
ACTCCCTGGTGG 2965

||| | ||| | | | | | | | | | | | | | | | |  
||  
Db 105

ACCGCTTCCGGAAATTGGGCTCCGGGAGACTTTGACAGTCTCCACAGTACACCCAGTAGG 46

Qy 2966  
CCCCATCCCCCAGTTCCTCACGATATGGTTTTTACTTCTGTGGATTTAATAAAAAAACT 3025

|| |||| | ||| || | ||| | | ||| | | | ||  
Db 45 -----CCAACAGT---GCTCGA---GG-----  
AATTCCGCAGCTTTTAGAGCAGAAGTA 3

Qy 3026 TC 3027

|  
Db 2 AC 1

# RESULT 7

US-10-478-914-64

; Sequence 64, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 64  
; LENGTH: 2120  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-64

Query Match 29.6%; Score 5788; DB 1; Length 2120;  
Best Local Similarity 43.2%; Pred. No. 0;  
Matches 1299; Conservative 0; Mismatches 734; Indels 974;  
Gaps 192;

Qy 57 TTGGCC-  
GTGCCGTAGCAGCGTCCCGCGCGCGGGCAGCGGCCAGGAGGCGCGTGGT 115

| |||| || | | || | | | | | | | | |  
|  
Db 1 TAGGCCTGTAC---GGAAGTGTT-----  
ACTTCTGCTCTAAAAGC-----T 38

Qy 116  
GCGGGTTTTCGGCGGCGGCTGAGGAAGAAGCGGGCGGCGCCTTCGGGAGGCGAGCAGGC 175

|||| ||| || ||| | | | |||| | ||||  
||

[illegible]

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Qy           708 ACTGTCCTGTGTGCAAGCAACAGTGTCTTCTCCAAAGACATCGTGGAAGAA-----
TTATTT 762
          ||| |||| | || | | || | | |||| | |||| |
Db           448 -CTGCCCCGGGAGCTGGCCAAGATG-
ATCAGAGGAGGACACAGAGGAGGAGGAGGAGAAGG 505

Qy           763
CATGCGTGATAGTGGCAGCAAGGCTGCCACCGACGCCCAGGATGCGAACCAGTGCTGCAC 822
          | | || | | |||| | | ||| | | || | |||| | |||
|||
Db           506 CCTCAGTCCTTG-GGCAGCTGGCCAGCCT-----TCCTGGCT-TGAACCTGGGCT-
CAC 556

Qy           823 TAGCTGTGAGGATAATGCCCCAGCCACCAGCTACTGTGTGGAGTGCTCGGAGC-
CTCTGT 881
          |         |||| | | |||| | |||| | || | || | || | |||
|
Db           557 TC-----AAGGACAAGGCCCAGGCCAC-----ACTG---GGGGATCTC-
AAGCAATCAG- 601

Qy           882 GTGAGACCTGTGTAGAGGCGCACCAGCGGGTGA--AGTACACCAAGG--
ACCATACTGTG 937
          ||| | || | | | || | |||| | | | || | || |||
Db           602 -----CTGAGAAAGTGTCACGTCA---
GTGACCACCTTCCCCGGGGTTACC----- 643

Qy           938
CGCTCTACTGGGCCAGCCAAGTCTCGGGATGGTGAACGTACTGTCTATTGCAACGTACAC 997
          | || | |||| | || | || | || |||| | | | | | |||
|
Db           644 CACTGGGCTGGGCC-CCATG---AGGGC---TAAGAGTG-
TGTCAACTTCCAGGGACCC 695

Qy           998
AAGCATGAACCCCTTGTGCTGTTTTGTGAGAGCTGTGATACTCTCACCTGCCGAGACTGC 1057
          |         || | | || | | |||| | || | |||| 
|
Db           696 A-----TACTCCATTG-----GGGCTTTGTT----
TCCCTTGCC-----C 727

Qy           1058
CAGCTCAATGCCACAAGGACCACCAGTACCAGTTCTTAGAGGATGCAGTGAGGAACCAG 1117
          || | | | || | |||| | || | | | |||| 
||
Db           728 CATCCTAGTTCC----AAGACCT----TCCCATCC-----ATGC-----
CCCAAG 765

Qy           1118 CGCAAGCTCCTGG-----
CCTCACTGGTGAAGCGCCTTGGGGACAAACATGCAACATTG 1171
          | | | | |||| | |||| | || | |||| 
Db           766 C-CTATCTTCTGGTTTCTTCCTCTC-----CGC--
TGGG----- 796

Qy           1172
CAGAAGAGCACCAAGGAGGTTTCGAGCTCAATCCGCCAGGTGTCTGACGTACAGAAGCGT 1231
          || | || || | | || | || | || || | || | |||
|
Db           797 -AGTAAAGTCCCCA-----TCTTCACTCTACCCTTCAGGACCCTCCC---

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Qy          1232
GTGCAAGTGGATGTCAAGATGGCCATCCTGCAGATCATGAAGGAGCTGAATAAGCGGGGC 1291
      || ||||| ||| || ||| || ||| |||
|
Db          846 CAGCCTGTGGA-----GGCCTCCC--AAGAT--TGTAG-----
GAATAGGC----C 883

Qy          1292
CGTGTGCTGGTCAATGATGCCCAGAAGGTGACTGAGGGGCAGCAGGAGCGCCTGGAGCGG 1351
      | | |||
Db          884 CAT-----
CCCT----- 890

Qy          1352 CAGCACTGGACCATG--ACCAAGATCCAGAAGCAC-
CAGGAGCACATTCTGCGCTTTGCC 1408
      | |||| |||| |||| ||| ||| ||||| ||| | | |
|
Db          891 ---CTCTGG-CCATGGCCCCAAGTTCC---TGCACACAGGAGCACCCACAGAG---
AGAC 940

Qy          1409
TCTTGGGCTCTGGAGAGTGACAACAACACAGCCCTTTTGCTTTCTAAGAAGTTGATCTAC 1468
      | | | ||| |||| || |||| | ||| |||
Db          941 AC---ACACAGGA-----CACAAAAC--
CCCTGGCACGTTTCAGAGA----- 976

Qy          1469
TTCCAGCTGCACCGGGCCCTCAAGATGATTGTGGATCCCGTGGAGCCACATGGCGAGATG 1528
      ||| || | | | | |||| ||||| |||
Db          977 ---CAGAAGCCACAGACAC-----ATCCC-----
GGC----- 1000

Qy          1529 AAGTTTTCAGTGGGAC-
CTCAATGCCTGGACCAAGAGTGCCGAGGCCCTTTGGCAAGATTGT 1587
      ||| ||| | || |||||
Db          1001 -----ACAGACAGACACACA-----
CGAGGCC----- 1022

Qy          1588
GGCAGAGCGTCTTGGCACTAACTCAACAGGCCCTGCACCCATGGCCCCCTCCAAGAGCCCC 1647
      ||| ||| || | | ||| |||| ||| | | ||| |||
|
Db          1023 -----AGCTCCCTTGCG-TGTC----CAGCCCCT----CCA-GACACCACCA-----
CTC 1062

Qy          1648
AGGGCCCCCTGAGCAAGCAGGGCTCTGGCAGCAGCCAGCCCATGGAGGTGCAGGAAGGCTA 1707
      || | |||| || || || |||| || | || |||| |||
Db          1063 AGAAACTCTGAG--AG-AGAGCATGGGCAGACACC--CTCA-----
GCAGACAGG--- 1107

Qy          1708 TGGCTTTGGGTCAGGAGATGATCCCTAC---TCAAGTGC---
AGAGCCCCATGTGTCAGG 1761
      ||| | | || | || || || | | |||||
Db          1108 AGGCCTGAGTTCCAG-----
TCTCCACCTTTATTGTCTTGAAAGCCCC----- 1151

Qy          1762

```

TGTGAAACGGTCCCGCTCAGGTGAGGGCGAGGTGAGCGGCCTTATGCGCAAGGTGCCACG 1821  
 || | | | |  
 Db 1152 --TG-----CTCTCTCTG-----  
 AGCCTTAT----- 1170

Qy 1822 AGTGAGCCTTGAACGCCTG-  
 GACCTGGACCTCACAGCTGACAGCCAGCCACCCGTCTTCA 1880  
 | | | | | | | | | | | | | | | |  
 Db 1171 -----TTCATCATCTGTAAAATGGGAATGTC--  
 CTGAATGACTTCTAAGGCTCTTTC 1220

Qy 1881  
 AGGTCTTCCCAGGCAGTACCACTGAGGACTACAACCTTATTGTTATTGAACGTGGCGCTG 1940  
 | | | | | | | | | | | | | | | |  
 |  
 Db 1221 TGGCTTGAAGTGTGAGAGCC----AAGCCACATCCCTC-----CTTGGGCAGG--  
 GCAG 1269

Qy 1941  
 CCGCTGCAGCTACCGGCCAGCCAGGGACTGCGCCTGCAGGAACCCCTGGTGCCCCACCCC 2000  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1270 CAGCTGCTGCCA-CAGCCT-CCAGCGGCTGCCACTGTGGG--  
 CTCTGGGAGCCGGAGCGA 1325

Qy 2001 TGGCTG---GCATGGCC-  
 ATTGTCAAGGAGGAGGAGACGGAGGCTGCCATTGGAGCCCCT 2056  
 | | | | | | | | | | | | | | | | | | | | | |  
 ||  
 Db 1326 T-GCTGTGTGAGAGGCAGAGTGCCAAGGATGAAG---  
 CTGGCACTGAACAGTAAGCGGCT 1381

Qy 2057 CCT-ACTGCCACTGAGGGCCCTGAGACCAAAC-----  
 CTGTGCTTATGGCTCTTGCGGAG 2110  
 | | | | | | | | | | | | | | | | | | | | | |  
 ||  
 Db 1382 CCAGGCCTCCTCT--GGGCCCAGGGCCCAGCCAATTTCTGTTCT----  
 GTTCCTGTAGAA 1435

Qy 2111 GGTCTTGGTGTGAGGGTCCCCGCTGGCCTCACCTAGTGGCAGCAC-  
 CAGCTCAGGGCT 2169  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1436 CGCTCT---CTG-GATTCCATAGCTGGAATCTCCT-----  
 CTCTTAGCTCAG--T 1479

Qy 2170 GGAGGTGGTGGCTCCTGA---GGGTACCT-CAGCCCCA---GGTGGTGGC--  
 CCGGGAAC 2220  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1480  
 GAAAAATAAAAATCCCAAATGGTGTGCCTACCTTCCCACTTCTTACTGGCTTCCAGGAGT 1539

Qy 2221  
 CCTGGATGACAGTGCCACCATTGCGGTGTCTGCCAGAAGCCAGGCGATCTGGTTATGTG 2280  
 | | | | | | | | | | | | | | | | | | | | | |  
 |||  
 Db 1540 CTTGGAGTTCATAGCCCC-----CCGAGCCTGCCTTAA---AGGGG-----  
 TGT- 1580

Qy 2281  
 CAACCAGTGTGAGTTTTGTTTCCACCTGGACTGTCACCTGCCGGCCCTGCAGGATGTACC 2340

```

|
Db      1581 CCTCCA-----CCCC-----CACCTACAG---
CTTCA-----C 1606

Qy      2341 AGGGGAGGAGTGGAGCTGCTCACTCTGCCATGTG-----CTCC----
CTGACCTGA 2387
|
Db      1607 AGGAGGGGAGAGG----
GCATCCAGTGTCTAGGAGTAGAAGTGTCTCCAGCTCTGTTCTCT 1662

Qy      2388 AGGAGGAGGATGGCAGCCTCAGCCTGGAT---
GGTGCAGACAGCACTGGCGTGGTGGCCA 2444
|
Db      1663 TGG-----GGC-----CCTGGGTGAAGGTGGGGTCTG---GGGC-
TTATGAAAT 1702

Qy      2445
AGCTCTCACCAGCCAACCAGCGGAAATGTGAGCGTGTACTGCTGGCCCTATTCTGTCACG 2504
|
Db      1703 AGGTCT---GGGCTTTGAGGAGG--ATG-GAGC-----
AGCCTCATTATGTGGGG 1746

Qy      2505 AACCTTGCCGCCCCCTGCATCAGCTGGCTACCGACTCCACCTTCTCCCTG-
GACCAGCCC 2563
|
Db      1747 AAGATGG--GGCCTCTG-----GGGCG-----TCACTGAGACCA--
CA 1780

Qy      2564
GGTGGCACCTTGGATCTGACCCTGATCCGTGCCC GCCTCCAGGAGAAGTTGTCACCTCCC 2623
|
Db      1781 GGTGGGGCCGGGG-----CTGGACCGCAGCTGTCT-
TGGGTGCCTGTGCCTGCACCC 1831

Qy      2624
TACAGCTCCCCACAGGAGTTTGCCAGGATGTGGGCCGCATGTTCAAGCAATTCAACAAG 2683
|
Db      1832 -----CTCCTCA-----CCCTAGAGACGG-----
AAGATGTGCAAAAAG 1865

Qy      2684
TTAACTGAGGACAAGGCAGACGTGCAGTCCATCATCGGCCTGCAGCGCTTCTTCGAGACG 2743
|
Db      1866 ---AAAGAAGGAAGGGCA-AC-TGCATTCCA-----GCC--CCACACT-----
GTGATG 1907

Qy      2744 CGCATGAACGAGGCCTTCGGTGACACCAAGTTCTCTGCTGTGCTGGTGGAGCCCCCG-
CC 2802
|
Db      1908 ACTTTGAGCCTGTCCTT---TCCCTCCTTGAGC-CTGTCTTGCTTGT----
CCCCTGTAA 1959

Qy      2803 GATGAGCCTGCCTGGTGCTGGCCTGAGTTCCCAGGAGCTGT-----
CTGGTGGCCCTG 2855

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Qy            101 -----CAGGAGGCGCG-----  
TGGTGC GGGTTTCGGCGGCGGCTGAGG 138

Db 2077 TTTTTTTTTTTTAAAAGAATGAGTTACATTTATTGATATGG--  
TTTGT CATATGCTTTAT 2020

Qy 139 AAGAAG-CGCGGGCGGCGCCTTCGGGAGGCGAGCA-----  
GGCAGCAGTTG 183

Db 2019 AAATGGTCAC-----CCTTT--  
GAAACATGTATTATTACTATTTGGGGGAGAGGGGG 1970

Qy 184 GCCGTGCC-  
GTAGCAGCGTCCCGCGCGCGGGCGGGCAGCGGCCAGGAGGCGCGTGGCGGC 242

Db 1969 ACTGTTTATTTTACAG-GGGACAAGCAAGACAGGCT-----  
CAAGGAGGGAAAGGACAG- 1917

Qy 243 GCTC---  
GGCCTCGCGGCGGGCGGGCGGCGAGCGGCCAGCAGTTGGCGGCGAGCGCGTC 299

Db 1916 GCTCAAAGTCATCACAGTGTGGG-----  
GCTGGAATGCAGT----- 1881

Qy 300  
TGC GCCTGCGCGGGCGGGCCCCGCGCCCCTCTCCCCCTGGGCGCCCCGGCGGCGTGT 359

Db 1880 TGC-CCTTC-CTTCTTTCTTTTGCACATCTTCCGTCTCTAGG-----  
GTGA 1836

Qy 360  
GAATGGCGGCCTCCGCGGCGGCAGCCTCGGCAGCAGCGGCCTCGGCCGCCTCTGGCAGCC 419

Db 1835 GGAGGGGTGCAGGCAC--AGGCACCCAAGACAGCTGCGGTC-----  
CAGCC 1792

Qy 420 CGGGCCCCGGGC-  
GAGGGCTCCGCTGGCGGCGAAAAGCGCTCCACCGCCCCTTC----- 471

Db 1791 CCGGCCCCACCTGTGGTCTCAG-TGACGCCCCAGAG-  
GCCCCATCTTCCCCACATAATGA 1734

Qy 472 GGCCGCAGCCTCGGCCTC--TGCCTCAGCCGCGGCGTCGT-  
CGCCCGCGGGGGGCGGCGC 528

Db 1733 GGCTGCTCCATCCTCCTCAAAGCC-CAGAC-CTATTTTATAAGCCC-----  
CAGACC 1684

Qy 529  
CGAGGCGCTGGAGCTGCTGGAGCACTGCGGCGTGTGCAGAGAGCGCCTGCGACCCGAGAG 588

Db 1683 C----CAC-----CTTC----ACCCAG-GGC-----  
CCCAAGAGAACAGAGCT 1650

Qy 589  
GGAGCCCCGCGCTGCTGCCCTGTTTGCACCTCGGCCTGTAGTGCCTGCTTAGGGCCCCGCGGC 648

Db 1649 GGAGACACTTCTACT--CC---TAGCACTGG-----  
ATGCCCTCT----- 1615

Qy 649  
CCCCGCCGCCGCCAACAGCTCGGGGGACGGCGGGGCGGCGGGGCGACGGCACCGTGGTGG 708  
||| | | | | | | | | | | | | | | | |

Db 1614 CCCCTCCTGTG----AAGCT-----GTAGGTGGGG-GGTGGAGGAC-  
ACCCCTTTAAGG- 1567

Qy 709  
CTGTCCCGTGTGCAAGCAACAGTGCTTCTCCAAAGACATCGTGGAGAATTATTTTCATGCG 768  
| | | | | | | | | | | | | | | | |

Db 1566 CAGGCTCGGGGG-----GCTATG-AACTCC-AAGAC-TCCTGG-----  
AAGCC 1527

Qy 769 TGATAGTGGCAGCAAGGCTGCCACCGACGCCCA-----  
GGATGCGAACCAGTGCTGCACT- 823  
| | | | | | | | | | | | | | | | |

Db 1526 AGTAAGAAGTGGGAAGGTAGGCAC-----ACCATTGCGATTTTTA----  
TTTTTCACTG 1476

Qy 824 AGCT--  
GTGAGGATAATGCCCCAGCCACCAGCTACTGTGTGGAGTGCTCGGAGCCTCTGT 881  
||| | | | | | | | | | | | | | |

Db 1475 AGCTAAGAGAGGAGATT-----CCAGCTA-----  
TGGAAT----- 1446

Qy 882  
GTGAGACCTGTGTAGAGGCGCACCAGCGGGTGAAGTACACCAAGGACCATACTGTGCGCT 941  
| | | | | | | | | | | | | | | |

Db 1445 -----CCAGAGAG---CGTTCTACAGGAACAGAAC--  
AGAAAT 1413

Qy 942 CTACTGGGCC---AGCCAAGTCTCGGGATGGTG-  
AACGTACTGTCTATTGCAACGTACAC 997  
| | | | | | | | | | | | | | | |

Db 1412 TGGCTGGGCCCTGGGCCCAGAGGAGGCCTGGAGCCGCTTACTGTTCAGTGC-----  
CAG 1359

Qy 998 AAGCATGAACCCCTTGTGCTGTTTTGTGAGAGCTGTGATACTCTCAC-  
CTGCCGAGACTG 1056  
| | | | | | | | | | | | | | | |

Db 1358 CTTTAT-----CCTTG-----GCACTCTG--CCTCTCACACAGCATCG-  
CT- 1321

Qy 1057 CCAGCT--  
CAATGCCCACAAGGACCACCAGTACCAGTTCTTAGAGGATGCAGTGAGGAAC 1114  
| | | | | | | | | | | | | | | |

Db 1320 CCGGCTCCCAGAGCCCACAGTGGCAGCCG-----CT----  
GGAGGCTGTGG----- 1279

Qy 1115  
CAGCGCAAGCTCCTGGCCTCACTGGTGAAGCGCCTTGGGGACAAACATGCAACATTGCAG 1174  
| | | | | | | | | | | | | | | |



Qy 1702 AGGCTATGGCTTTGGGTCAGGAGATGATCCCTACTCAAGTGCAGAGCC-  
CCATGTGTCAG 1760  
||| ||| | || |||| || ||| |||  
|||  
Db 890 AGGGATGGGCCT-----ATTCTACAATCTTGGGAGGCCTCCA-----  
CAG 850

Qy 1761  
GTGTGAAACGGTCCCGCTCAGGTGAGGGCGAGGTGAGCGGCCTTATGCGCAAGGTGCCAC 1820  
| | | | | | | | | | | | | | |  
|  
Db 849 G-----CTGAGCTGGTGGG-----GAGGGTCCTGAAGGGTAGAGTG--  
AA 812

Qy 1821  
GAGTGAGCCTTGAACGCCTGGACCTGGACCTCACAGCTGACAGCCAGCCACCCGTCTTCA 1880  
|| | | ||| | ||| |||| || || || |||  
|  
Db 811 GATGGGGACTTTA-----  
CTCCCAGCGGAGAGGAAGAAACCAG-----A 773

Qy 1881  
AGGTCTTCCCAGGCAGTACCACTGAGGACTACAACCTTATTGTTATTGAACGTGGCGCTG 1940  
|| | |||| |||| | | | | | | | |  
||  
Db 772 AGAT-----AGGCT-----TGGGG-----  
CATGGATGGGAAAGGTCTTGGAAC- 734

Qy 1941  
CCGCTGCAGCTACCGGCCAGCCAGGGACTGCGCCTGCAGGAACCCCTGGTGCCCCACCCC 2000  
||| | | | |||| | |||||  
Db 733 -----AGGATGGGGCAAG--GGAAAC---  
AAAGCCCCA---- 706

Qy 2001 TGGCTGGCATGGCCATTGTCAAGGAGGAGGAGAC---  
GGAGGCTGCCATTGGAGCCCCTC 2057  
| |||| | | | | ||| | | | |  
|||  
Db 705 -----AATGGAGTATGGGTCCCTGGAAGTTGACA-----  
CACTC 672

Qy 2058 CTA-CTGCCAC-  
TGAGGGCCCTGAGACCAAACCTGTGCTTATGGCTCTTGCGGAGGGT-- 2113  
|| | || | || ||||| | || | | ||||  
Db 671 TTAGC--CCTCATGGGGGCCAG-----CC-----  
CAGTGGGTAA 639

Qy 2114 -  
CCTGGTGCTGAGGGTCCCCGCCTGGCCTCACCTAGTGGCAGCACCAGCTCAGGGCTGGA 2172  
|| || | | || | | | | | |||| | |||  
||  
Db 638 CCCCAGGGAAGTGGTCACATGACGTGACACTTCT-----  
CAGCTGATTGCTTGA 590

Qy 2173 GGTGGTGGCTCCTGAGGGTACCTCAGCC----CCAGGTGGTGGCCCGGGAAC---  
CCTGG 2225  
| | | | | | ||| ||| | | | |||| | |  
||  
Db 589 GAT----CCCCCAGTGTG-



GCCTGGGCCTTGTCCTTGAGTGAGCCCAGGTTCAAGCCAGG 535

Qy 2226 ATGACAGTGCCACCATTGCGTGTCTGCCAGAAGCC--  
AGGCGATCTGGTTATGTGCAA 2283

Db 534 AAGGCTG-GCCA-----GCTGCCCAAGGACTGAGGCCTTCTCCTCCT---  
CCT 491

Qy 2284 CCAGTGTGAGTTTTGTTTCCACCTGGACTGTCACCT--  
GCCGGCCCTGCAGGATGTACCA 2341

Db 490 CCTCTGTG-----TCCTCCT---CGATCATCTTGGCCAGCTC-----  
CC- 455

Qy 2342  
GGGGAGGAGTGGAGCTGCTCACTCTGCCATGTGCTCCCTGACCTGAAGGAGGAGGATGGC 2401

Db 454 -----GGGGCAGCT-----CCACGT-CTCC---  
ACCTGCCATCTGGATCTGGC 416

Qy 2402  
AGCCTCAGCCTGGATGGTGCAGACAGCACTGGCGTGGTGGCCAAGCTCTCACCAGCCAAC 2461

Db 415 T--CTCA-TCTGTCTCGT-----TCTTG---  
GGTAGCCGGTATTTGTCT----- 378

Qy 2462  
CAGCGGAAATGTGAGCGTGTACTGCTGGCCCTATTCTGTACGAACCCTGCCGCCCCCTG 2521

Db 377 ---CGGAAGTG-----GCT--CCGCAGTGTGGCCCG--  
CTCTGCCTTCCTCTG 337

Qy 2522 CATCAGCTG-  
GCTACCGACTCCACCTTCTCCCTGGACCAGCCCGGTGGCACCTGGATCT 2580

Db 336 TGTGAAGTGTGCATCCCGCTCCATCTTCTCT----TCCA--CGAGTTGC-----  
TTCT 290

Qy 2581  
GACCCTGATCCGTGCCCGCCTCCAGGAGAAGTTGTACCTCCCTACAGCTCCCCACAGGA 2640

Db 289 GATACT-----CCTC-----GT--ACTCCTCC---  
CGGCTC----- 264

Qy 2641  
GTTTGGCCAGGATGTGGGCCGCATGTTCAAGCAATTCAACAAGTTAACTGAGGACAAGGC 2700

Db 263 --ATGCCC-----TGAGC-----TTC-----  
GGC 247

Qy 2701  
AGACGTGCAGTCCATCATCGGCCTGCAGCGCTTCTTCGAGACGCGCATGAACGAGGCCTT 2760

Db 246 TGCCGACTTGTCCC-CATCTCCCT-----TATCCTCGC---CGCCT--  
CCCAGGCTCC 200

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Qy          2761  CGGTGACACCAAGTTC-TCTGCTGTGCTGGTGAGCC-
CCCCGCCGATGAGCCTGCCTGGT 2818
                | |||      | |||| | | ||||      ||| ||| ||
Db          199  CAGTG-----AGGTTCCTTCAGCTG-----
GCCGCCACC----- 171

Qy          2819
GCTGGCCTGAGTTCACAGGAGCTGTCTGGTGGCCCTGGTGATGGCCCTGAGGCTGGAGC 2878
                ||| ||      | ||| || |      ||| |||| | |||      ||| ||
||
Db          170  -ATGGTCT---TCACCATGAAC-----GCCATGGTCTTCGCC-----
GGCCGGGGC 129

Qy          2879  CCCCATGGCCAGC--CCA---
GCCTGGCTCTGTTCCTCTGTCTGTCCTGTACCCCCATCCCCACT 2933
                ||      ||| || ||| ||| ||| |||      ||| ||| | ||| ||
Db          128  ACCGGGCGCCTGCTACCACGCGCCAGGC-----ACCGGGCA---
CGTCCGC--- 86

Qy          2934
CCCCTGGTGGCCTGACTCCCACTCCCTGGTGGCCCCATCCCCAGTTCCTCACGATATGG 2993
                |||| ||| | | | | ||| ||| | ||||      | |||
||
Db          85  -----GCCT-ACTTCAGCACTCCAGTAGGCCAA-----CAGT---GCTCGA---
GG 47

Qy          2994  TTTTACTTCTGTGGATTTAATAAAAAAACTTCAC--CAGTTCAAAAAAA 3042
                | ||| | ||| | ||| | ||| | ||| ||| | |||
Db          46  -----AATTCCGCAGCTTTTAGAGCAGAAGTAACACTTCCGTACAGGCCTA 1

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Qy          11 CCGGTCGGAGGCCGGGCCGCG-GAGC-CAGGAGTGAC----
TAGCAGCAGTTTGGCCGT 64
|      |   |||| | | || | | |||| | | | | | |   |   |   ||
|
Db          2495 CTAGCGGCCGCGACC-TGCAGCTCGAGCACATGTG-
GCCTTTTTTTTTTTTTTTTTTACAT 2438

Qy          65 GCCGTAGCAGCGTCCCCGCGCGCGGCGG-
GCAGCGGCCCAAGGAGGCGCGTGGTGC GG GTTT 123
|      |   | | |   |   |   |   |||| |   |   || |
|||
Db          2437 GTTTAAATATATTTTATTTC AAGTTAATATAACAGCCATGAT-----TTGTTC--
ATTT 2386

Qy          124 CGGCGGCG-
GCTGAGGAAGAAGCGCGGGCGGCGCTTCGGGAGGCGAGCAGGCAGCAG-- 180
|   |   ||| | | | | | | | | | | | | | | |
Db          2385 AAGTGAAATGCTTCGATAAAAAACCCCGGTGTCAC--
TTGGTTAAAAATATTGGAGACAGAT 2328

Qy          181 -----
TTGGCCGTGCCGTAGCAGCGTCCC GCGCGCGGGCAGCGGCCCAGGAGGC- 232
|   ||| | | ||| || | | | |   || | | ||
|
Db          2327 TAAATGTTAAGCC--ACTATAGTAGT GACTC-----
TGTTTCTTTAGACT 2285

Qy          233 ---GCGTGGCGGCGCTCGGCCTCGCGGCGGCGGCGGCGGCAG--
CGGCCCAGCAGTTGGC 287
|   || |   ||| | | | | | | | | | | | | | |
Db          2284 ATTGCATG-----TACCTTGTTAATG----AACTACAGGAATGCACA----
TTGAT 2242

Qy          288 GGCGAGCGC---GTCTGCGCCTG-
CGCGGCGGGCCCCGCGCCCTCCTCCCCCCTGGGC 343
|   |   |||| | | || | | |   || |   |||| ||| | |
Db          2241 ATAATGCACAATGTCTTCACATGTCTC-----
AATCCTCATTCCTCTTCCTTTCAT---- 2191

Qy          344
GCCCCCGGCGGCGTGTGAATGGCGGCCTCCGCGGCGGCAGCCTCGGCAGCAGCGGCCTCG 403
|   ||||| | | | | | | | | | | | | | | |
Db          2190 -----GCCTCC----CTAATGCCTCAGTATC--
CAATATAA 2161

Qy          404 GCCGCCTCTGGCAGCCCGGGCCCGGGCGAGGGCTC----
CGCTGGCGGCGAAAAGCGCTC 459
|   |   | | |   |   |   || |   || | | | | |
|
Db          2160 AACTACAAAACTACT-----
GTTCTTTTCGTTTGAGTGGTATTTAATTA 2116

Qy          460 CACCGCCCCCTTCGG-----CCGCAGCCTCGGCCTCTGCCTCAGC----
CGCGGCGTC 507
|   |   |   |||   |||| | | | | | | | | |
||
Db          2115
AAACTTCAATTCTATGTTATTTCCACAGTCCAGTAATTTATTTTAAATTTGAGTAATTTTC 2056

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Qy          508  GTCGCCCGC-----
GGGGGGCGGCGCCGAGGCGCTGGAGCTGCTGGAGCACTGCG 557
      || |           | | | | |           | | | | | | | | | |
|
Db          2055 AAATTCCACAAACAAAACCTGAAGAACAGCAATATTTTGTTTGAATTTCT----
CTCTTCT 2000

Qy          558  GCGTGTGCAGAGAGCGCCTGCGACCCGAGAGGGAGCCCCGCCT--
GCTGCCCT----- 608
      |           ||| || |           | | | | |           || | | | | |||
Db          1999 GTACACTCAGTGATCTAAACACCCACAATA-----
TCCAACATACACAAACCTCAGGGGAA 1945

Qy          609  --GTTTG--
CACTCGGCCTGTAGTGCCTGCTTAGGGCCCCGCGGCCCCCG----- 653
      ||| |           || |           | | ||           | | | | | || | | |
Db          1944
GGGTTAGTAAACACACACAAGATTGGAATCATGGTGCTCTTTGCTCCTGAATGGAATGGT 1885

Qy          654  -
CCGCCGCCAACAGCTCGGGGGACGGCGGGGGCGGCGGGGCGACGGCACCGTGGTGGACTGT 712
      || | |           || || | || | || |           | |           | |||||           ||
|
Db          1884 CCCACAG-AAAAAGCACAGGATACAGC---ACAACATAAG--GGCACC--
TGTTACATAT 1833

Qy          713  CCCGTGTGC-AAGCAACAGTGC-
TTCTCCAAAGACATCGTGGAGAATTATTTTCATGCGT- 769
      ||| || || ||           || || || | |           |||           ||| |||           | |||
|
Db          1832 GAAGTGAGCAAAACATACTAGCATTTTCTATATGCATAATGGGGAA-----
ACCTGCATA 1778

Qy          770  -
GATAGTGGCAGCAAGGCTGCCACCGACGCCCAGGATGCGAACCAGTGCTGCACTAGCTG 828
      | ||| ||           |||           |||| ||           |           || |||           | ||
||
Db          1777 GGTTAGAGG-----GCCTTTTACGCTCA-TTTAAAAATCAG-----
GCAAGTTG 1735

Qy          829  TGAGGATAATGCCCCAGCCACCAG-----
CTACTGTGTGGAGTGCTCGGAGCCTCTGT 881
      | | | ||           ||           | | |           || | |           | || |           | ||
|
Db          1734
TCTGTAAACATTTTCAATAATCTGGAAGCACTGCAATCCAGTGACGATGTGCTGATTA 1675

Qy          882  GTGAGACCTGTGTAG----
AGGCGCACCAGCGGGTGAAGTACACCAAGGACCATACTGTG 937
      |||           || ||| |           | |           | ||           | |           || |||           | ||
|
Db          1674 GTGTTGTCTTTGTTGGCACTGACAGTCTTGCATG-GTCATATGCCAGTGTTTTTGCT-
TT 1617

Qy          938  CGCTCTAC--TGGGCCAGCCAAGTCTCG--
GGATGGTGAACGTACTGTCTATTGCAAC-G 992
      ||| | | ||           | ||           | |           | ||           ||           ||| || | |           | |
|
Db          1616 AGCTTTTCTTTGAATAAAACAGATTTAAATGCATTTAGACAATAC-
GTATTTGTAAGCTG 1558

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Qy 993 TACACAAGCATGAACCCCTTGTGCTGTTTTGTGAGAG---CTGTGATACTCTCA--  
CCTG 1047  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1557  
TTTACATACACTAAATTTAAGAGATTCAATATTAGAGTTTCTTTGTTTCTTTAAACTA 1498

Qy 1048 CCGAGACTGCCAGCTCAATGCCACAAAGGACCACCAGT-----  
ACCAGTTCTTAG 1097  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1497 CAGAG--TG-CAAATCAGGTTCTTCA-----  
CAACAGATTGAATATTGAGCAGTTCTTTA 1446

Qy 1098  
AGGATGCAGTGAGGAACCAGCGCAAGCTCCTGGCCTCACTGGTGAAGCGCCTTGGGGACA 1157  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1445 AAGA--AAGAGGGGAAGAAAAAAG-----  
CCCAAGTGA----- 1413

Qy 1158  
AACATGCAACATTGCAGAAGAGCACCAAGGAGGTTTCGAGCTCAATCCGCCAGGTGTCTG 1217  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 1412 ---ATAAAACATTGAACTATTCCCC-----TTCGAAAATAAAT-----  
TCTA 1373

Qy 1218 ACGTACAGAAGCGTGTGCAAGTGGATGTCAAGAT-GGCCATCCTGCAGATCATG--  
AAGG 1274  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1372 AAATGATGTGGAATGTGAAATAAGGTTTTAACATAGGTGATCC--  
AAGTTTATAGTTAGA 1315

Qy 1275 AGCTGAATAAGCGGGGC--CGTGTGCTGGTCAATGATGCCCAGAA---  
GGTGACTGAGGG 1329  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1314 AAC--AAAAGAAGTCCTTCATGAAAT----  
AAAGGTTACAAGAACACGTTGCCTGTTTT 1261

Qy 1330 GCAGCAGGAGCGCCTGGAGCGGCAGCACTGGACCATGACCAAGATCCAGAA--  
GCACCAG 1387  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1260 CCCCCATTATAAACTG-----  
AGAAGTGGGTAAAGACGATGTTTCAGTACGAAAATAG 1208

Qy 1388 GAG----  
CACATTCTGCGCTTTGCCTCTTGGGCTCTGGAGAGTGACAACAACACAGCC-- 1441  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1207 GTGACTACAGGATCAGCGCTTCATCTCACATGCT-----GTACC-----  
CAAAGCCAG 1160

Qy 1442 -  
CTTTTGCTTTCTAAGAAGTTGATCTACTTCCAGCTGCACCGGGCCCTCAAGATGATTGT 1500  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1159 GCTGTGGCTGTCCATACGGTGG-----  
TGCGGTATAACCATAACCAAAGGTG----- 1112

Qy 1501  
GGATCCCGTGGAGCCACATGGCGAGATGAAGTTTCAGTGGGACCTCAATGCCTGGACCAA 1560

|| | ||| || || | || ||| || | || |  
 |||  
 Db 1111 ----CCTGGGGAGGGAC--GGCAA-----CACTGGGTCCT-  
 GCTGTCAGCATCAA 1069  
  
 Qy 1561 GAGTGCCGAGGCCTTTGGCAA--  
 GATTGTGGCAGAGCGTCCTGGCACTAACTCAACAGGC 1618  
 | | | | | | | | | | | | | | | | | |  
 Db 1068 CTGGGGC-TGACCATAAACAATGGGTTGTGTCT-----  
 CTGTAGCTTGTTCCTCT--- 1020  
  
 Qy 1619 CCTGCACCCA-----  
 TGGCCCTCCAAGAGCCCCAGGGCCCTGAGCAAGCAGGGCTC 1671  
 | | | | | | | | | | | | | | | | | |  
 |||  
 Db 1019 TCTTTTCTCAGTGATTCTGAAGCATCTAATTTATCCA----CCTTTGTCAAGTA---  
 CTC 967  
  
 Qy 1672  
 TGGCAGCAGCCAGCCCATGGAGGTGCAGGAAGGCTATGGCTTTGGGTCAGGAGATGATCC 1731  
 | | | | | | | | | | | | | | | | | |  
 ||||  
 Db 966 -----CTTCATGACC-TGGA--TGAAATAGGGC-ATGGC-----  
 AAAATCC 930  
  
 Qy 1732  
 CTACTCAAGTGCAGAGCCCCATGTGTCAGGTGTGAAACGGTCCCGCTCAGGTGAGGGCGA 1791  
 | | | | | | | | | | | | | | | | | |  
 |||  
 Db 929 ATGATATTGTGC----CTCCATG---CAGTT-----TCT-----  
 AGGACGA 896  
  
 Qy 1792  
 GGTGAGCGGCCTTATGCGCAAGGTGCCACGAGTGAGCCTTGAACGCCTGGACCTGGACCT 1851  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 895 -----CATCTG-----GCCTTAAAAG-----  
 AT 878  
  
 Qy 1852  
 CACAGCTGACAGCCAGCCACCCGTCTTCAAGGTCTTCCCAGGCAGTACCACTGAGGACTA 1911  
 | | | | | | | | | | | | | | | | | |  
 Db 877 CGTAACAGGTAAACAGACAAGC-----TCCAAAGCA----  
 CTCT----- 843  
  
 Qy 1912  
 CAACCTTATTGTTATTGAACGTGGCGCTGCCGCTGCAGCTACCGGCCAGCCAGGGACTGC 1971  
 | | | | | | | | | | | | | | | | | |  
 Db 842 ---CTTTTTTCTTCTGCAAAAACCACTGCAGGAGTT-  
 CTTGAGCCAATTCAGTATCTTT 787  
  
 Qy 1972  
 GCCTGCAGGAACCCCTGGTGCCCAACCCCTGGCTGGCATGGCCATTGTCAAGGAGGAGGA 2031  
 | | | | | | | | | | | | | | | | | |  
 Db 786 AGATTGAGAAGC-----ATACTGCATTGCAT---  
 CCTTGTA----- 753  
  
 Qy 2032 GACGGAGGCTGCCATTGGAGCCCCTC-  
 CTACTGCCACTGAGGGCCCTGAGACCAAACCTG 2090  
 | | | | | | | | | | | | | | | | | |

|  
Db 752 -----AGGCTGTCTTTCTTGACAGCTCTAC-----  
ACTCTGTTTCCA-----G 714

Qy 2091  
TGCTTATGGCTCTTTCGGAGGGTCCTGGTGCTGAGGGTCCCCGCCTGGCCTCACCTAG-- 2148  
| | | | | | | | | | | | | | | | | | | | | |  
Db 713 CGATTGTTGCCTTTGAAGAG-----ATAAGCAGCAATTCT---  
CCTGAACTCAATGAGTT 662

Qy 2149 --  
TGGCAGCACCAGCTCAGGGCTGGAGGTGGTGGCTCCTGAGGGTACCTCAGCCCCAGGT 2206  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 661 CATGTTTTTCCAAACGCTGAGCAAGC-  
GAGATATTGTCAAAGTTGTCATAAGCATCTATT 603

Qy 2207  
GGTGGCCCGGGAACCCTGGATGACAGTGCCACCATTGCGGTGTCTGCCAGAAGCCAGGC 2266  
| | | | | | | | | | | | | | | | | | | | | |  
Db 602 GATGTTTCGAGAGCC-----TGATAAT-----  
CTTCTTCTGTAATAAAAAGA----- 561

Qy 2267 GATCTGGTTATGTGCAACCAGTGTGAGTTTTGTTTCCACCTGG-  
ACTGTCACCTGCCGGC 2325  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 560 ----TTGTTCAATG-ATTCAATCACAGATTTGTTGTTA--TGGTTCTG--  
AACTGAACGC 510

Qy 2326  
CCTGCAGGATGTACCAGGGGAGGAGTGAGCTGCTCACTCTGCCATGTGCTCCCTGACCT 2385  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 509 AAATACGTTTTACCAGTGGT-----AGCTGTTTAACCTTGC-TGAAATAATTGA-  
CT 459

Qy 2386  
GAAGGAGGAGGATGGCAGCCTCAGCCTGGATGGTGCAGACAGCACTGGCGTGGTGGCCAA 2445  
| | | | | | | | | | | | | | | | | | | | | |  
Db 458 GCACGAGTGTGAT-----CCAACC-----  
GTGGAGACAGCAC----- 427

Qy 2446  
GCTCTCACCAGCCAACCAGCGAAATGTGAGCGTGTACTGCTGGCCCTATTCTGTACGA 2505  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 426 -----CATCAGCAAATCATTTAACAACAGAG-----GCTTG---  
AATTCTAAGTAGA 383

Qy 2506  
ACCCTGCCGCCCCCTGCATCAGCTGGCTACCGACTCCACCTTCTCCCTGGACCAGCCCGG 2565  
| | | | | | | | | | | | | | | | | | | | | |  
Db 382 ACTGTATTGC-----TCTGTAGTATA---  
GTTCCACAT----- 353

Qy 2566 TGGCACCC-  
TGGATCTGACCCTGATCCGTGCCCGCCTCCAGGAGAAGTTGTACCTCCCT 2624  
| | | | | | | | | | | | | | | | | | | | | |  
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Db          352 TGGCAACCTTGGTAATGAT-----ATCTTTG-----AATTG-----
CCCT 318

Qy          2625
ACAGCTCCCCACAGGAGTTTGCCCAGGATGTGGGCCGCATGTTCAAGCAATTCAACAAGT 2684
      |      |||      ||      ||||      |||||      |||||      |||||
|
Db          317 TCT-TTCCAGGCATCAGTT-----GGATG-----
ATTCATCATGG 284

Qy          2685
TAACTGAGGACAAGGCAGACGTGCAGTCCATCATCGGCCTGCAGCGCTTCTTCGAGACGC 2744
      ||| |      ||      ||| |||      |||||
Db          283 TAATTATGG-----CATTATC-----
ATATTCTTC----- 259

Qy          2745
GCATGAACGAGGCCTTCGGTGACACCAAGTTCTCTGCTGTGCTGGTGGAGCCCCCGCCGA 2804
      || | | | |      |||||      || |||      |||
||
Db          258 ----ATACTTGTGCATACAAAACACCA-----GTTCTG-----
CCCAAAGA 222

Qy          2805 TGAGCCTG-CCTGGTGTCTGGCCTGAGTTCCCAGGAGCTGT---
CTGGTGGCCCTGGTGAT 2860
      ||||| ||      |||      |||      || ||      || ||      | |      || | | | |
|
Db          221 TGAGCTTGTTCTGCAGCT---CTTAGCACCTTGGGAATATTCACT-CTAGACCAG--
AAC 168

Qy          2861 GGCCCCCTGAGGCTGGAGCCCCCAT-----GGCC-----
AGCCCAGCCTGGC--- 2901
      || || |      |||      ||| |||      |||      ||      || | | |
Db          167 AGCTCCAGGTGCT----
CCCTCATTTTCTGAGGCTTAAATTTAGAGTATAGAATAGCTAA 112

Qy          2902 -TCTGTTCTCTGTCC--
TGTCACCCCATCCCCACTCCCCTGGTGGCCTGACTCCCACTCC 2958
      || ||      |      |||      ||| | | |      | | | ||||      |||      |||      ||| |
|
Db          111 TTCAGTAAACATTCCCATGTGAGCTCG-CTCAAGTCCC--AGTG--
CTGCTTCCAA---C 60

Qy          2959 CTGGTGGCCCCATCCCCCAGTTTCCTCACGAT-
ATGGTTTTTACTTCTGTGGATTTAATAA 3017
      ||||| |      || | | |      ||||| || | | | |      || | |
Db          59 ATGGTGATCAGCTCTTCAAAATAGCCACGATCCTGATAGTAGC--
CAGTAGG----- 10

Qy          3018 AAAAAACTTCACCAGT 3033
      || ||||
Db          9 -----CCAACAGT 2

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TCCTTCAAATGTTTTAAATGTGTGGAACAATGCTACATCTACACTTGGTTGGCTTAATCA 1898

Qy 325 CCCTCCTCCCC-----CCCTG----  
GGCGCCCCCGGCGGCGTGTGAATGGCGGCCTCCG 374

||||| || ||||| || || || || || || || || ||

||

Db 1897 ACCTCTTCAATGGTGGGCCCTGAGGAAGCACCACCAGAGG-----GAGGAGC-  
TCCACCA 1844

Qy 375 CGGCGGCAGCCTCGGCAGCAGCG-GCCTC--GGCC-  
GCCTCTGGCAGCCCGGGCCCGGGC 430

| | | | | ||| || ||||| ||| ||||| ||| | | | | |

Db 1843 CCAGGAAATCCCC--CAG--GCATTCTCCTGGCATGCCTCCTGCA-  
CTCTGGTACAGCT 1789

Qy 431  
GAGGGCTCCGCTGGCGGCGAAAAGCGCTCCACCGCCCCCTTCGGCCGAGCCTCGGCCTCT 490

| | | | ||| | | ||| | || | || | ||| | | | ||

|||

Db 1788 TGGTGAT--GATGGGGTTGCAAA-CTTTCTCCAGCTCTTTCTGTTGATG-  
TTCAAATTCT 1733

Qy 491 GC---CTCAGCCG-  
CGGCGTCGTGCGCCGCGGGGGGCGGCGCCGAGGCGCTGGAGCTGCT 546

| ||||| | | | || | | || | | | |

|

Db 1732 TCCTTCTCAGCAGTCTGATTCTTATCAAGC-----  
CAGTTGATAAT 1692

Qy 547 GGAGCACTGCGGCGTGTGCAGAGAGCGCCTG--  
CGACCCGAGAGGGAGCCCCGCCTGCTG 604

|| | | | ||| |||| | | ||| | || | | | | ||||

||

Db 1691 --TTCATTAC-ACTTGTCCAGA-ATCTTCTGTTTGTCTCATCGTTAATCTTGCCT--  
TG 1638

Qy 605 CCCTGTTTGCCTCGGC--  
CTGTAGTGCCTGCTTAGGGCCCGCGGCCCCCGCCGCCCA 662

|||| ||| | | ||| |||| | | | |

||

Db 1637 --AAGTTT---CTCATCTTCAACAGT---TGCTTT-----  
CATGTTGAAGCA 1598

Qy 663 ACAG-CTCGGGGACGGCGGGGCGGCGGGCGACGGCACCGTGGTGGACTG--  
TCCCGTGT 719

| ||| | || | | || | |||| || ||| || | |

|

Db 1597 TAGGACTCAAGTGAATTCTTG-----  
GATGACACCTTGTCCCTCTGCTTCTCATCT 1547

Qy 720  
GCAAGCAACAGTGTCTTCTCAAAGACATCGTGGAGAATTATTTTCATGCGTGATAGTGGCA 779

| ||| || ||||| | || |||| ||| ||| | ||

|

Db 1546 TC-AGCTT-TGTACTTCTC----AGCTTCCTGGA-----CCATACGT-  
TCAATGTCT 1502

Qy 780  
GCAAGGCTGCCACCGACGCCAGGATGCGAACCAGTGCTGCACTAGCTGTGAGGATAATG 839

| ||| | | || |||| | || ||| ||||

|  
Db 1501 TCCTTGCT-CAAACG--GCCCTTGT-----CATTAGT-----  
GATAGTA 1466

Qy 840 CCCCAGCCACCAGCTACTGTGTGGAGTGCTCGGAGCCTCTGTGTGAGACC-  
TGTGTAGAG 898

| | | | | | | | | | | | | | | | | | | | | |  
Db 1465 ATCTTGTTCTCTTTTCC-----CGTACTCTTGTCACAGC-  
AGAGACATTGAGTA--- 1417

Qy 899 GCGCACCAGCGGGTGAAGTACACCAAGGACCATACTGTGCGCTCTA-  
CTGGGCCAGCCAA 957

| | | | | | | | | | | | | | | | | | | | | |  
Db 1416 ---TACCATTGG-----CATCAATGTCAAAA--  
GTGACTTCAATCTGAGGAACAC-- 1372

Qy 958 GTCTCGGGATGGTGAACGTA---  
CTGTCTATTGCAACGTACACAAGCATGAACCCCTTGT 1014

| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 1371 --CTCGGGGTGCAGGAGGTATGCCTGTGAGTTCAAACCTTGC-CAAGCAGG-----  
TTGT 1321

Qy 1015  
GCTGTTTTGTGAGAGCTGTGATACTCTCACCTGCCGAGACTGCCAGCTCAATGCCACAA 1074

| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1320 TATCCTTTGTCATGGC-----ACGCTCGCCTTCATAAAC-----  
CTGAAT-----A 1280

Qy 1075  
GGACCACCAGTACCAGTTCTTAGAGGATGCAGTGAGGAACCAGCGCAAGCTCCTGGCCTC 1134

| | | | | | | | | | | | | | | | | | | | | |  
Db 1279 AGCACACCAG-GCTGGTTGTCAGAATAGGTAGTGAAGGT-CTGTGTCTGCT--  
TGGTAGG 1224

Qy 1135 ACTGGTG---AAGCGCCT--  
TGGGGACAAACATGCAACATTGCAGAAGAGCACCAAGGAG 1189

| | | | | | | | | | | | | | | | | | | | | |  
Db 1223 AATGGTGGTATTACGCTTGATGAGGACAGTCATGACTC-----  
CACCA----- 1181

Qy 1190 GTTCGCAG-CTCAATCCGCCAGGTGTCTGACGTACAGAAGCGTG---  
TGCAAGTGGATGT 1245

| | | | | | | | | | | | | | | | | | | | | |  
Db 1180 ----GCAGTTTCAAT--ACCAAG-----  
GGAAAGAGGAGTGACATCCAAGAG----- 1140

Qy 1246  
CAAGATGGCCATCCTGCAGATCATGAAGGAGCTGAATAAGCGGGGCCGTGTGCTGGTCAA 1305

| | | | | | | | | | | | | | | | | | | | | |  
Db 1139 -----CAGCAAATCTTGAACATTCT-----CAG---  
ACTTGTCT- 1109

Qy 1306 TGATGCCAG--  
AAGGTGACTGAGGGGCAGCAGGAGCGCCTGGAGCGGCAGCACTGGACC 1363

| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 1108 -----CCAGACAAGATGGCT-----GCCTGGA-CAGCTGC-----  
ACC 1077

Qy 1364  
ATGACCAAGATCCAGAAGCACCAGGAGCACATTCTGCGCTTTGCCTCTTGGGCTCTGGAG 1423  
| | | ||| | | | ||| | | | |||  
Db 1076 ATAAGCAA----CAGCTTCATCAGGG-----  
TTGATGCTCTT----- 1044

Qy 1424  
AGTGACAACAACACAGCCCTTTTGCTTTCTAAGAAGTTGATCTACTTCCAGCTGCACCGG 1483  
| | | ||||| | | | ||||| | | | ||| | | |  
|  
Db 1043 -----ATTGAGTTCTTTTCCATT-GAAGAAGT-----  
CTTGAGAAAGCTTCTG 1002

Qy 1484 GCCCTCAAGATGATTGTGGATCC-  
CGTGGAGCCACATGGCGAGATGAAGTTTTAGTGGGA 1542  
| | | ||||| | | | |||||  
Db 1001 AATC-----  
TTGGGGATACGAGTAGAACAC----- 976

Qy 1543  
CCTCAATGCCGTGGACCAAGAGTGCCGAGGCCTTTGGCAAGATTGTGGCAGAGCGTCCTGG 1602  
| | | | | | | | | | | | | | | | | | | | | |  
Db 975 CAACCAGGACAATATCATGAAT-CTGTGAC--TTGTCTAGTTTG-----  
GCAT----- 931

Qy 1603  
CACTAACTCAACAGGCCCTGCACCCATGGCCCCCTCCAAGAGCCCCAGGGCCCCCTGAGCAA 1662  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 930 -----CTCGAAGGGCTTT-----  
CTCTACTGGGTCCAGGGTGCCACGGAACAG 888

Qy 1663 GCAGGGCTCTGGCAGCAGCCAGCCCATGGAG--  
GTGCAGGAAGGCTATGGCTTTGGGTCA 1720  
| | | |||| | | | | | | | | | | | | | |  
|  
Db 887 GT-----CAGCATTGAGTTCTTCAAATCGGGCACG--GGTAATGG---  
AGGTATA 843

Qy 1721  
GGAGATGATCCCTACTCAAGTGACAGAGCCCCATGTGTCAGGTGTGAAACGGTCCCGCTCA 1780  
| | | ||| ||| | | | | | | | | | | | | | | |  
Db 842 GAAGTCGATTCTTCATA-----  
GAGAGAATCGATCTCAAT-- 807

Qy 1781  
GGTGAGGGCGAGGTGAGCGGCCTTATGCGCAAGGTGCCACGAGTGAGCCTTGAACGCCTG 1840  
| | | |||| | | | | | | | | | | | | | | | |  
|  
Db 806 -----ACTGGCCT-----GGGTGCTGGAAGAGAG---  
GGTACGCTTA 773

Qy 1841  
GACCTGGACCTCACAGCTGACAGCCAGCCACCCGTCTTCAAGGTCTTCCCAGGCAGTACC 1900  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | | | |  
Db 772 G-----CACG-----  
TTCACAAGCAGTACG 753

Qy 1901  
ACTGAGGACTACAACCTTATTGTTATTGAACGTGGCGCTGCCGCTGCAGCTACCGGCCAG 1960  
| | | | | | | | | | | | | | | | | | | | | |  
Db 752 GAGGCGTCTTACAGCTCTCTTGTCT-----CACTGATGT-----  
CCTT 714

Qy 1961  
CCAGGGACTGCGCCTGCAGGAACCCCTGGTGCCCCACCCCTGGCTGGCATGGCCATTGTC 2020  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 713 CTTATGCTTGCGCTT-----AAACTCAG-----  
CAATAAAATGGTTGACCATTCGGTTGTC 663

Qy 2021  
AAGGAGGAGGAGACGGAGGCTGCCATTGGAGCCCCTCCTACTGCCACTGAGGGCCCTGAG 2080  
| | | | | | | | | | | | | | | | | | | | | |  
Db 662 AA-----AATCTTCTCC-----ACCCAAGTGGG---  
TGTC 636

Qy 2081  
ACCAAACCTGTGCTTATGGCTCTTGCGGAGGGTCCTGGTGCTGAGGGTCCCCGCCTGGCC 2140  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 635 TCCA-----GCTGTAGACTT-----GACCT---CAAAGATTCCAT-----  
CC 602

Qy 2141 TCACCTAGTGGCAGCACCAGCTCAGGGCTGGAGGTGGTGGCTCCT-  
GAGGGTACCTCAGC 2199  
| | | | | | | | | | | | | | | | | | | | | |  
Db 601 TCA-ATAGTG-----AGGAT-----  
TGACACATCAAAAGTGCCACC-T 566

Qy 2200  
CCCAGGTGGTGGCCCGGAACCCCTGGATGACAGTGCCACCATTGCGTGTCTGCCAGAA 2259  
| | | | | | | | | | | | | | | | | | | | | |  
Db 565 CCCAGGT-----CAAAGATGA---GC--ACGTTT--C-  
TTTCTGC----- 534

Qy 2260  
GCCAGGCGATCTGGTTATGTGCAACCAGTGTGAGTTTTGTTTCCACCTGGACTGTCACCT 2319  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 533 -----TC-----CAACCT-----TTTTGT-----  
CTAAGCCGTAAGCA 506

Qy 2320 GCCGGCCCTGCAGGATGTACCAGGGGAGGAGTGGAGCTGCTCACT----  
CTGCCATGTGC 2375  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 505 ATAG---CAGCAG-----CAGTTG-----  
GCTCATTAATAATTCTAAGTAC 468

Qy 2376 TCCCTGACCTGAAGGAGGAGGATGGCAGCCTCAGCCTGGATGGTGCAGACAGCA-  
CTGGC 2434  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 467 ATTGAGACCAGCA-----ATAGTTC---  
CAGCATCT--- 440

Qy 2435  
GTGGTGGCCAAGCTCTCACCAGCCAACCAGCGGAAATGTGAGCGTGTACTGCTGGCCCTA 2494

Db 439 TTGGTAGCCTGACGCTGA-GAGTCAT-----TAAAGTAAGCTGGCACTG-  
 TGACC--- 392

Qy 2495  
 TTCTGTACGAACCCTGCCGCCCCCTGCATCAGCTGGCTACCGACTCCACCTTCTCCCTG 2554  
 |

Db 391 -ACAGCATTGGTAACAGTCTTCCCAAG-----  
 GTAGGCTTCTGCAATTTCTTCATCTTT 338

Qy 2555 GACCAGCCCGGTGGCACCCCTGGATCTGACCCTGATCCGTGCCCGCCTCCAGG-  
 AGAAGTT 2613  
 |

Db 337 GTC-----AGAACCATAGA--AGAC-----  
 ACCTCCTCTGGATAGAAGCT 300

Qy 2614 ----  
 GTCACCTCCCTACAGCTCCCCACAGGAGTTTGCCAGGATGTGGGCCGCATGTTCA 2669  
 |

Db 299 TTTGGTCT-CTCCCTTGTATTCTAC-----TTGGACCT-----TGGGCC-----  
 TGCC 258

Qy 2670 AGCA--  
 ATTCAACAAGTTAACTGAGGACAAGGCAGACGTGCAGTCCATCATCGGCCTG-- 2725  
 |

Db 257 AGCATCATTACCACCATAA-----AGGGCCAATGT----TTCAT-  
 ATCAGACTGGA 211

Qy 2726 CAGC-GCTTCTTCGAGAC-  
 GCGCATGAACGAGGCCTTCGGTGACACCAAGTTCTCTGCTG 2783  
 |

Db 210 CAACAGCATCATCAAATCTGCGTCCAATC-AGACGTTTGGCATCAAAAA-----  
 CTG 160

Qy 2784 TGCTGGTGGAGCCCCCGCCGATGAGCCTGCCTGGTGCT----  
 GGCCTGAGTTCCCAGGAG 2839  
 |

Db 159 TGTTGGTGGGGT-----TCATTG--CAACTTGATTCTTTGCGGCATCA---  
 CCGATCAA 111

Qy 2840  
 CTGTCTGGTGGCCCTGGTGATGGCCCTGAGGCTGGAGCCCCCATGGCCAGCCCAGCCTG 2899  
 |

Db 110 CCGTTCAGTGTCC---GTAAAGGCGACATAGCTTGGAG-----TG-----  
 GTTCGGTTT- 65

Qy 2900  
 GCTCTGTTCTCTGTCTGTACCCCATCCCCACTCCCCTGGTGGCCTGACTCCCACTC-- 2957  
 |

Db 64 -CCCTGATCATTGGCAATTATC----TCGACTTTTCCGTGCTGG-  
 AAAACACCCACACAA 11

Qy 2958 --CCTGGTGG 2965  
 |



CGGGCCCCGCGCCCTCCTCCCCCCTGGGCGCCCC 348  
 |||| | ||| | || | | | | | | ||| || ||  
 Db 154 GAGCAC--CTG-----GAGCTGTTCTGGTCTAGAGTGAATATT----  
 CCCAAGGTGCTAA 202

Qy 349  
 CGGCGGCGTGTGAATGGCGGCCTCCGCGGCGGCAGCCTCGGCAGCAGCGGCCTCGGCCGC 408  
 || || ||| | ||| | | |||| | | |  
 |  
 Db 203 GAGCTGC---AGAA---CAAGCTCATCTTTG-----GGCAGAA-----  
 CTGGTGT 241

Qy 409  
 CTCTGGCAGCCCGGGCCCGGGCGAGGGCTCCGCTGGCGGCGAAAAGCGCTCCACCGCCCC 468  
 | || | | | | | | | | | | | | | |  
 |  
 Db 242 TTTTGTAT-----  
 GACAAGTATGAAGAATATGATAATGCCATAATTACCATGATGAATCA 296

Qy 469 TTCGGCCGCAGCCTCGGCC-  
 TCTGCCTCAGCCGCGGCGTCTGCGCCGCGGGGGGCGGCG 527  
 | | | | |||| | | | | | | | | | | |  
 |  
 Db 297 TCCAACCTGATGCCTGGAAAGAAGGGCAATTCAAAGATATCATTACC--AAGGTTGC--  
 CA 352

Qy 528  
 CCGAGGCGCTGGAGCTGCTGGAGCACTGCGGCGTGTGCAGAGAGCGCCTGCGACCCGAGA 587  
 | || | | | | | | | | | | | | | |  
 Db 353 ATGTGGAACCTATA-CTAC-AGAGCAATACAGT-  
 TCTACTTAGAATTC----- 396

Qy 588 GGGAGCCCCGCCTGCTGCCCTGTTTGCCTCGGCCTG-  
 TAGTGCCTGCTTAGGGCCCGCG 646  
 |||| | || | |||| ||| | |||| | | ||  
 ||  
 Db 397 --AAGCCTCTGTTGTTAAATGATTTG-----CTGATGGTGCTGTCT-----  
 CCACG 440

Qy 647 G-----CCCCGC-CGCCGCCAA-----CAGCTCGG-  
 GGGACGGCGGGGCGGCGGGCG 692  
 | | | | | | | | |||| | | | | | | | |  
 |  
 Db 441 GTTGATCACACTCGTGCAGTCAATTATTTAGCAAGGTTAAACAGC--  
 TACCACTGGTG 498

Qy 693 ACGGCACCGTG---  
 GTGGACTGTCCCGTGTGCAAGCAACAGTGCTTCTCCAAAGACATCG 749  
 | |||| | | | | | | | |||| | | | |  
 |||  
 Db 499 A---AACCGTATTTGCGTTCAGTTCAGAACCATAACAACA---  
 AATCTGTGAATGAATCA 552

Qy 750  
 TGGAGAATTATTTTCATGCGTGATAGTGGCAGCAAGGCTGCCACCGACGCCAGGATGCGA 809  
 | || | | || | | | | | | | | | | |  
 |||||  
 Db 553 TTGAACAATCTTT-----TTATTACAGAAG-AAGATTATCA--GGCTC-----  
 TGCGA 597



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Qy          810 ACCAGTGTGCACTAGCTGTGAGGATAATGCCCCAGCCACC--
AGCTACTGTGTGGAGTG 867
      ||          || |||          ||||          | || |          | | | | |
||
Db          598 ACAT-----CAATAG-----
ATGCTTATGACAACTTTGACAATATCTCGCTTG 640

Qy          868 CTCGGAGCCTCTGTGTGAGACCTGTGTAGAGGCGCAC-
CAGCGGGTGAAGTACACCAAGG 926
      |||  ||| | || |          | || ||          | ||          ||
|
Db          641 CTC--AGCGTTTG-GAAAAACAT-----GAACTCATTGAGT-----
TCAGGA 679

Qy          927 ACCATACTG-
TGCGCTCTACTGGGCCAGCCAAGTCTCGGGATGGTGAACGTACTGTCTAT 985
      | ||| |  |||| |          | || |          | || | |||          ||| | ||
||
Db          680 GAATTGCTGCTTATCTCTTCAAAGGCAAC--AATCGCTGGA-----AACAGA--
GTGTAG 730

Qy          986 TGCAACGTACACAAGCATGAACCCCTTGTGCTGTTTTGTGAGAGCTGTGATACTCT-
CAC 1044
      ||          |  |||| | ||          |||| | |          ||          | || ||          |||
|
Db          731 AGCTGTG----CAAGAAAGACAGCCTT-TACAAGGATGC-
AATGCAGTATGCTTCTGAAT 784

Qy          1045
CTGCCGAGACTGCCAGCTCAATGCCCACAAGGACCACCAGTACCAGTTCTTAGAGGATGC 1104
      ||          || ||||          | || |          | || | || |          |||| ||
|||
Db          785 CTAAAGATACTG-----AATTGGC--TGAAGAACTCCTG---CAGTGGTTT----
TTGC 829

Qy          1105 AGTGAGGAACCAGCGCAAGCTCCTG-
GCCTCACTGTTGAAGCGCCTTGGGGACAAACATG 1163
      ||          || || || || |          |||          | || |          ||| | |          ||| | || | |
|
Db          830 AGGAAGAAAAAAGAGAGTGCTTTGGAGCTTGTCTGTTTA---CCT--
GTTACGATCTTT 883

Qy          1164 CAA--
CATTGCAGAAGAGCACCAAGGAGGTTTCGAGCTCAATCCGCCAGGTGTCTGACGT 1221
      ||          |  |||| |          || ||          || | ||          || | |
Db          884 TAAGGC----CAGATGTCGTCTAG-----
AAACTGCATGGAGGC----- 919

Qy          1222 ACAGAAGCGTGTGCAAGTGATGTCAAGATGGCC---
ATCCTGCAGATCATGAAGGAGCT 1278
      |||  || |          |||| |          ||| ||          || | ||| ||||| ||||
Db          920 ACAATATC-----
ATGGATTTTGCCATGCCCTATTTTCATCCAGGTCATGAAGGA--- 968

Qy          1279
GAATAAGCGGGGCCGTGTGCTGGTCAATGATGCCCAGAAGGTGACTGAGGGGCAGCAGGA 1338
      | || | ||| | ||          | | | | || | || |||
|
Db          969 -----GTACTTGACAAAGGTG-----
GATAAATTAGATGCTTCAGAA 1005

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Qy 1339 GCGCCTGGAGCGGCAGCACTGGACCATGACCAAGATCCAGAAGCACCAGGAGCACATTCT 1398  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1006 TCCTGAGAAAAGAAG-----AAGAACAAGCTACAGAGACAC----  
 AACCCATT-- 1050

Qy 1399 GCGCTTTGCCTCTTGGGCTCTGGAGAGTGACAACAACACAGCCC--  
 TTTTGCTTTCTAAG 1456  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1051 --GTTTATGGTC---  
 AGCCCCAGTTGATGCTGACAGCAGGACCCAGTGTTC----- 1097

Qy 1457 AAGTTGATCTACTTCCAGCTGCACCGGGC-CCTCAAGATGATTGTGG--  
 ATCCCGTGGAG 1513  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1098 -----CGTCC--CT-CCCCAGGCACCTT---TTGGTTATGGTTATACC---  
 GCA 1137

Qy 1514 CCACATGGCGAGATGAAGTTTCAGTGGGACCTCAATGCCTGGACCAAGAGTGCCGAGGCC 1573  
 | | | | | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1138 CCAC---CGT-ATGGA---CAG-----CCACA--GCCTGG-CTTTGGGTAC---  
 AGCA 1177

Qy 1574 TTTGGCAAGATTGTGGCAGAGC--GTCCT---GGCACTAA--CTC-  
 AACAGGCCCTGCAC 1625  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1178 TGTG---AGAT----  
 GAAGCGCTGATCCTGTAGTCACCTATTTTCGTACTGAAACATCGT 1230

Qy 1626 CCATGGCCCC-TCCAAGAGCCCCAGGGCCCCTGAGCAAGCAGG-----  
 GCTCTGGCAGC 1678  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1231 CTTTACCACTTCTCAGTTTATAATGG-----  
 GGGAAACAGGCAACGTGTTCTTGTAAC 1285

Qy 1679 AGCCAGCCCATGGAGG--TGCAGGAAG-----  
 GCTATGGCTTTGGGTCAGGAGATGATC 1730  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1286  
 CTTTATTTTCATGAAGGACTTCTTTTTGTTTCTAACTATAAACTTGATCA----- 1335

Qy 1731 CCTACTCAAGTGCAGAGCCCCATGTGTGAGGTGTGAAACGGTCCCGCTCAGGTGAGGGCG 1790  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1336 CCT----ATGTTAAAA---CCTTATTTT-----  
 ACATTCCACATCATTTTA----G 1375

Qy 1791 AGGTGAGCGGCCTTATGCGCAAGGTGCCACGAGTGA--  
 GCCTTGAACGCCTGGACCTGGA 1848  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1376 AATTTA-----TTTTCG-  
 AAGGGGAATAGTTTCAATGTTTTATTCACTTGGGCTT--- 1424

Qy 1849 CCTCACAGCTGACAGCCAGCCACCCGTC-TTCAAGGTCTTCCCAGGCAGTACCA-  
 CTGAG 1906

Db 1425 -----TTTTTCTTCC--CCCTCTTTCTTTAAAGAACTGCTCA--  
ATATTCAATCTGTT 1473

Qy 1907 GACTACAACCTTATTGTTATTGAACGTGGCGCTGCCGCTGCA--  
GCTACCGGCCAGCCAG 1964

||  
Db 1474 GTGAAGAACCTGAT-----TTGCACT----  
CTGTAGTGTTTAAAGAAACAAAG 1517

Qy 1965 GGA CTGCGCCTGCAGGAACCC-----CTGGTGCCCCACCCCTGGCTGGCATGGCC--  
AT 2016

||  
Db 1518 AA ACT-CTAATATTGAATCTCTTAAATTTAGTGTATGTAAAC-  
AGCTTACAAATACGTAT 1575

Qy 2017  
TGTCAAGGAGGAGGAGACGGAGGCTGCCATTGGAGCCCTCCTACTGCCACTGAGGGCCC 2076

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|  
Db 1576 TGTCTAAATG-----CATTTAAATCTGTTTTATT--  
CAAAGAAAAGCT 1616

Qy 2077 TGAGACCAAAC-  
CTGTGCTTATGGCTCTTGCGGAGGGTCCTGGTGCTGAGGGTCCCCGCC 2135

|  
Db 1617 AAAGCAAAAACACTG-GCATATGAC-CATGC--AAG-----  
ACTGTCAGTGCCAACA 1664

Qy 2136 TGGCCTCACCTAGTGGCAGCACC-  
AGCTCAGGGCTGGAGGTGGTGGCTCCTGAGGGTACC 2194

|  
Db 1665 AAGACAACACTAAT--CAGCACATCGTACA---CTGGA-----TTGC-----  
AGTGCT 1707

Qy 2195 TCAGCCCCAGGTGGTGGCCCGGGAACCCTGGATGACAGTGCCACCATTGTC-  
GTGTCTG 2253

|  
Db 1708 T----CCCAGATTAT-----TGAAAAATG--TTACAG----  
ACA ACTTGCCCTGATTTTT 1751

Qy 2254 CCAGAAGC----CAGGCGATCTGGTTATGTGCA-----  
ACCA GTGTGAGTTTTGTTTCC 2303

|  
Db 1752 AAATGAGCGTAAAAGGCCCTCT-  
AACCTATGCAGGTTTCCCCATTATGCATATAGAAAAT 1810

Qy 2304 ACCTGGACTGTACCTGCCGGCCCTGCAGGATGTACCAGGGG---  
AGGAGTGGAGCTGCT 2360

||  
Db 1811 G-CTAGTATGTTT--TGCT--CACTTCA-  
TATGTAACAGGTGCCCTTATGTTGTGCTG-- 1862

Qy 2361  
CACTCTGCCATGTGCTCCCTGACCTGAAGGAGGAGGATGGCAGCCTCAGCCTGGATGGTG 2420

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|          |   |||    |   |||   ||  
|  
Db      1863 -----TATCCTGTGCT---TTTTCTGTGGGA-----CCATT-  
CCATTCAAGGAG 1901  
  
Qy      2421  
CAGACAGCACTGGCGTG GTGCCAAGCTCTCACCAAGCCAACCAGCGGAAATGTGAGCGTG 2480  
        || | ||||| | || | |||| ||           |||| |  
||  
Db      1902 CAAAGAGCAC---CATGAT-TCCAATCT-----  
TGTGTGTGTT 1935  
  
Qy      2481  
TACTGCTGGCCCCATTCTGTGCACGAACCCTGCCGCCCCCTGCATCAGCTGGCTACCGACT 2540  
        || || |||||         ||||| |       || | | ||| ||  
Db      1936 TA---CTAACCT-----TCCCTGAGG---  
TTTGTGTATGTTGGATA----- 1971  
  
Qy      2541  
CCACCTTCTCCC TGACCAGCCCGGTGGCACCCCTGGATCTGACCCTGATCCGTGCCCGCC 2600  
                ||                   |||| | ||| | |||| |||  
Db      1972 ----TT-----GTGGTGT TTAGAT----CACTGA---  
GTG----- 1996  
  
Qy      2601 TCCAG----GAGAAGTT--  
GTCACCTCCCTACAGCTCCCCACAGGAGTTTGCCAGGATG 2654  
            | |||     ||||| || | || | | || | | |||| |  
||  
Db      1997 TACAGAAGAGAGAAAATTCAAACAAAAATATTGCTGTTCTTC-----AGTTT----  
TGTTTG 2047  
  
Qy      2655 TGGGC--  
CGCATGTTCAAGCAATTCAACAAGTTAACTGAGGACAAGGCAGACGTGCAGTC 2712  
        ||| | | | | | | | | | | | | | | | | | || |  
Db      2048 TGGAATTTGAAATTACTCAAATTTAAATAAATTACT--GGACT--  
GTGGAAAT----- 2097  
  
Qy      2713  
CATCATCGGCCTGCAGCGCTTCTTCGAGACGCGCATGAACGAGGCCTTCGGTGACACC-- 2770  
        | ||| | | ||| | | ||| | | |||| | |||  
Db      2098 -AACATAGAATTGAAGTTTTAATTAAATAC-  
CACTCAAACGAAAAGAACAGTAGTTTTTG 2155  
  
Qy      2771  
AAGTTCTCTGCTGTGCTGGTGAGCCCCCGCCGATGAGCCTGCCTGGTGCTGGCCTGAGT 2830  
        |||| | | ||| | | || || | | | |||| | || ||  
||||  
Db      2156 TAGTTTTATATTG-GATACTGAGGCATTAG--GGAG-  
GCATGAAAGGAAGAGGAATGAG- 2210  
  
Qy      2831 TCCCAGGAGCTGTCTGGTG--GCCCTGGTGATGGCCCCCTGAGGCTG-  
GAGCCCCCATGGC 2887  
        | | | ||| | | ||| | | | | | | | | | | | |  
Db      2211 -----GATTGAGACATGTGAAGACATTGTG-----  
CATTATATCAATGTGCATTCTGTGA 2260  
  
Qy      2888  
CAGCCCAGCCTGGCTCTGTTCTCTGTCTGTCACCCCATCCCCACTCCCCTGGTGGC--- 2944  
        | | | | | | | | | ||| |||| | | |||||  
Db      2261
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AGCTGCCAGGAGTGCATC 2268

Qy 397 GGCCTCGGCCGCTCTGGCAGCCCGGGCCCGGGCGAGGGCTCCG-  
CTGGCGGGCGAAAAGC 455

| | | | | | | | | | | | | | | | | |  
Db 2267 G-----AGCCTGTAATTTCTGTTCTC---  
TGAATCCCCCATCTTTCTGC-----A 2225

Qy 456  
GCTCCACCGCCCTTCGGCCGCAGCCTCGGCCTCTGCCTCAGCCGCGGCGTCGTCGCCCCG 515

| | | | | | | | | | | | | | | | | |  
| |

Db 2224 GCTCCA-AGCTTTGTGTCCACAGCCTGTGACTCTG-  
TGCTAACAAATCGCTATTGTCC- 2168

Qy 516  
CGGGGGGCGGCGAGGCGCTGGAGCTGCTGGAGCACTGCGGCGTGTGCAGAGAGCGCC 575

| | | | | | | | | | | | | | | | | |  
Db 2167 ---AGTGGGGCGAATGGTGGCTGGA---ACTAAAGAATTGC----TGT-  
CTGGTTTCTAT 2119

Qy 576 TGCGACCCGAGAGGGAGCCCCGCCT---GCTGCCCTGTTTGCACTCGGCCTG----  
TAGT 628

| | | | | | | | | | | | | | | | | |  
Db 2118 TCAAATCC---AGGTAGCGAGATATATGAATGGACTTTTCG-  
AATCGTCATGTGAATAAC 2063

Qy 629 GCCTGCTTAGGGCCCCGCGGCCCCCGCCGCCCAACAGCTCGG--  
GGGACGGCGGGGCGG 686

| | | | | | | | | | | | | | | | | |  
| |

Db 2062 GTCTGCTC--GGCATGAAGGCTCAG----AGCCA--  
TGCTAGGAAGGATTAACCTGTAGG 2011

Qy 687 CGGGCGAC-GGCA-  
CCGTGGTGGACTGTCCCGTGTGCAAGCAACAGTGCTTCTCCTCAAAGA 744

| | | | | | | | | | | | | | | | | |  
| | |

Db 2010 CTGACCACTAACATCCTTTGTGGT-----ACGAGGG--AGAAACA-----  
TTCCCAAGT 1964

Qy 745  
CATCGTGGAGAATTATTTTCATGCGTGATAGTGGCAGCAAGGCTGCCACCGACGCCAGGA 804

| | | | | | | | | | | | | | | | | |  
|

Db 1963 -ATCAT-----TTTATTACACTTAATTTT-----  
CTATCCCATACCCCCAAA 1921

Qy 805 TGCGAACCAGTGCTGCACTAGCTGTGAGGATAATGCCCCAGCCAC----  
CAGCTACTGTG 860

| | | | | | | | | | | | | | | | | |  
|

Db 1920 TAAG-----GCTAGCTAT----  
TTAATTAGTTGGCCGCTTTTCTCTTAATTTT 1877

Qy 861  
TGGAGTGTCTCGGAGCCTCTGTGTGAGACCTGTGTAGAGGCGCACCAGCGGGTGAAGTACA 920

| | | | | | | | | | | | | | | | | |  
| |

Db 1876 TAGTGTTTCTGTTGATAATGTGTGAGT-TTGGGAAAATGCTAAGTAGC-----

TTTTCA 1824

Qy 921 CCAAGGACCATACTGTGCGCTCTACTGGG-----CCAGCCAAGTCT--  
CGGGATGGTG 971  
| | | | | | | | | | | | | | | | | |

Db 1823  
CTTAGAACACTGTTATTTTCTCTTTAAAGTTTTCTACCTTACATTTATTATAGCATAGTT 1764

Qy 972 AACGTACTGTCTATTGCAACG-TACA-CAAGCATGA-  
ACCCCTTGTGCTGTTTTGTGAGA 1028  
| | | | | | | | | | | | | | | | | |

Db 1763 ATC-----TTTATAGCATAGATGCAGAAAGTAAGAGAGAGCTTGT--  
TTTTTCAAGAAA 1712

Qy 1029 G-----CTGTGATACTCTCACCTGCC-----  
GAGACTGCCAGCTCAATGCCCAAG 1075  
| | | | | | | | | | | | | | | | | |

Db 1711  
ACAACCCTTTAAAATACTTTCCAACCCATGAAGGGAAAAATCCTCCTTTTTTCCCCCAAG 1652

Qy 1076 GACCACCAGTACCAGTT-CTTAGAGGATGCAGTGAGGAACCAGCGCAAGCTCC---  
TGGC 1131  
| | | | | | | | | | | | | | | | | |

Db 1651 TGCATTC--TACTTATTACTT-----TGCATT-----  
TTTCTCCCAAAGTC 1613

Qy 1132 CTCACTGGTGAAGCG-CCTTGGGGACAA----  
ACATGCAACATTGCAGAAGAGCACCAG 1186  
| | | | | | | | | | | | | | | | | |

Db 1612 CAAATTTATGCAAAGAAAATAGAAACAAGTTCAAATGCAA---TGCATTA----  
ACCAAA 1560

Qy 1187 GAGGTTTCGCAGCTCAATCCGCCAGGTGTCTGACGTACAGAAGCGTGTG-  
CAAGTGGATGT 1245  
| | | | | | | | | | | | | | | | | |

Db 1559 TA---AAACAAGTC--TCCTTCAAATTAGGAACCAACCTAAGCATTGTAAAGTG--  
TAG 1507

Qy 1246 CAAGATGGCCATCCTGCAGA--  
TCATGAAGGAGCTGAATAAGCGGGGCCGTGTGC----T 1299  
| | | | | | | | | | | | | | | | | |

Db 1506 CAGAAT-----CAGAATTCTTTTAAAAATTAGATTT--GGAACC-  
TGAACCTATAT 1460

Qy 1300  
GGTCAATGATGCCCAGAAGGTGACTGAGGGGCAGCAGGAGCGCCTGGAGCGGCAGCACTG 1359  
| | | | | | | | | | | | | | | | | |

Db 1459 AATTCATAATTCTCATT---  
TTTCTGTGAAAATTATTTTATCTTTCTCCTGTATACCTG 1403

Qy 1360 -GACCATGACCAAGATCCAGAAGCACCAGGAGC----ACATTCTGCGCTT---  
TGCCTCT 1411  
| | | | | | | | | | | | | | | | | |

|  
Db 1402 AAAAAATGTCCATAGGCTTAAAGGTCA--TGCTTTTACATTC----  
CTTCCATATCACA 1349

Qy 1412  
TGGGCTCTGGAGAGTGACAACAACACAGCCCTTTTGCTTTCTAAGAAGTTGATCTACTTC 1471  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 1348 GGTACTATGAAGTAAGG-----AGACTTTTAGGTTTCTT-----  
TTTGTCTTAAAC 1303

Qy 1472 -CAG-CTGCACCGGGCCCTCAAGATGATTGTGGATCCCGTGG---AGCCACA---  
TGGCG 1523  
| | | | | | | | | | | | | | | | | | | | | |

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Db 1302 TCAGACAGCTTTGTAAGC---  
AGTAGTGTGTAGATTACAAGAGTTAGACAAAAGCAGGCG 1246

Qy 1524 AGA---  
TGAAGTTTCAGTGGGACCTCAATGCCTGGACCAAGAGTGCCGAGGCCTTTGGCA 1580  
| | | | | | | | | | | | | | | | | | | | | |

Db 1245 CGACTGAGAAGAGTTGGTGGG-----GGA-----  
GAAGC----- 1217

Qy 1581  
AGATTGTGGCAGAGCGTCTGGCACTAACTCAACAGGCCCTGCACCCATGGCCCCCTCCAA 1640  
| | | | | | | | | | | | | | | | | | | | | |

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Db 1216 ---TTGGGGCA---CTTCCTGTC----ACTCAACA-----  
CATTCCAGATCACTAAAA 1174

Qy 1641 GA--  
GCCCCAGGGCCCCCTGAGCAAGCAGGGCTCTGGCAGCAGCCAGCCCATGGAGGTGCA 1698  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 1173 AATTTCCACA----CCCTCTGCATTCC---CCCTTGC-----CCACTCC----  
AGTTCCC 1130

Qy 1699  
GGAAGGCTATGGCTTTGGGTCAGGAGATGATCCCTACTCAAGTGCAGAGCCCCATGTGTC 1758  
| | | | | | | | | | | | | | | | | | | | | |

||  
Db 1129 GGTA-----TTT---TC-----  
TGATTCCATATGTTGTGGTATTTACCATACTTC 1088

Qy 1759 AGGTGTGAAACGGTCCCGCTC-AGGTGAGGGCGAGGTGAGCGGC--  
CTTATGCGCAAGGT 1815  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 1087 -----TC--TCCCTCACTAGGCTCTGGCAAG----  
ACTGCTTCAGAGGGGATGCAT 1043

Qy 1816 GCCACGAGTGAGCCTTGAACGCCTGGACCTGGACCTCACAGCTGACAG--  
CCAGCCACCC 1873  
| | | | | | | | | | | | | | | | | | | | | |

Db 1042 TCCTTTAGATTGCAC--AAAGC--GGAGCTGGG--  
AAAATGGCTGGCAGTTTCAGAATCTA 988

Qy 1874 GTCTTCAAGGTCTTCCCAGGC---  
AGTACCACTGAGGACTACAACCTTATTGTTATTGAA 1930



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||| ||| ||| ||| ||| ||| ||| |||
Db          987 GTC-ACGA-----TCGCACGCATGAGCACCTC-----AC-
ACATCCATGT----- 950

Qy          1931
CGTGGCGCTGCCGCTGCAGCTACCGGCCAGCCAGGGACTGCGCCTGCAGGAACCCCTGGT 1990
|| ||||| ||||| ||||| ||||| |||||

|
Db          949 -----CC-----CTACC-----CGCC-----
CCCCGCT 931

Qy          1991 GCCCCACCCCTG--
GCTGGCATGGCCATTGTCAAGGAGGAGGAGACGGAGGCTGCCATTG 2048
||| ||||| ||||| ||| ||| |||||

Db          930 --CCCGCCCTGCAGCTGGC-TGACC--
TGTCT----- 903

Qy          2049 GAGCCCCTCCTACTGCCACTGAGGGCCCTGAGACCAAACCTG--
TGCTTATGGCTCTTGC 2106
|| || || ||| || || | | ||| ||| || || |||||

|||
Db          902 ---CACCCACTGCTGGC-CTATCGAAC----
GGCCAGGACTGTCTGGTTTTGGCTCGTGC 851

Qy          2107
GGAGGGTCCTGGTGCTGAGGGTCCCCGCCTGGCCTCACCTAGTGGCAGCACCAGCTCAGG 2166
|| |||| | ||||| | || || |||

|
Db          850 -----CTTT--GTCCATGTCTGGCTT-----AGTTCCT-
CTCTG- 820

Qy          2167
GCTGGAGGTGGTGGCTCCTGAGGGTACCTCAGCCCCAGGTGGTGGCCCGGAACCCCTGGA 2226
|| | | |||| |||| ||| |||

||
Db          819 -----TCTATGCTTGCTCTACCCCC-----ACCG---
CCCCAGG- 788

Qy          2227 TGACAGTGCCACCATTGCGGTGTCTGCCAGAAGCCAGGC-
GATCTGGTTATGTGCAACC 2285
|| | ||| | |||| || |||| | | ||| |||

Db          787 ---CGG---CACAA-----GTGTTTG-----GCCACACAAACTAGAGAT----
AGAA 750

Qy          2286
AGTGTGAGTTTTGTTTCCACCTGGACTGTACCTGCCGGCCCTGCAGGATGTACCAGGGG 2345
| ||| |||| || || || || ||| ||| |||

Db          749 AAGGTGGTAAAAAATTCAAACCTTTTCTAAATTCT-----
CCAACAGTTTATTCT---- 700

Qy          2346 AGGAGTGAGCTGCTCACTCTGCCATGTGCTCCCT-----
GAC----- 2383
||| | | || ||| | | |||| | ||

Db          699 ---TGTGAATTTCTTCCTTCT-
TTAAATACTCCATTTTAAGAAAACAAAAAATTAATTA 644

Qy          2384 -CTGAAGGAGGAGGATGGCAGCCTCAGCCTGGATGGTGCAGACAG-
CACTGGCGTGGTGG 2441
|| |||| | |||| | || ||| ||| | | |||| | |

Db          643 TCTAAAGGCAAGAATGGAA--

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AGCAACCTTTGTGTTCTTATAATAACTGACTT----- 591

Qy 2442 CCAAGCTCTCACCAGCCAACCAGCGAAATGTGAGCGTGTACTGCTGGC-  
CCTATTCTGT 2500

| | | | | | | | | | | | | | | | | | | |  
| | | |

Db 590 CATAACTCTCTCCAG-----CTGC-GTTATGGGA-  
TGTGTATAAAAAGCTTCTGTTCTG- 539

Qy 2501 CACGAACCCTGCCGCCCCCTGCATCAGC-TGGCTACCGACTCCACCTTC----  
TCCCTGG 2555

| | | | | | | | | | | | | | | | | | | |  
Db 538 --AGAACAAAGGAG-  
CACGTGCAGAAATGAGACGAAAAAATCCACTGACAGTATTCCATT 482

Qy 2556  
ACCAGCCCGGTGGCACCCCTGGATCTGACCCTGATCCGTGCCCGCCTCCAGGAGAAGTTGT 2615

| | | | | | | | | | | | | | | | | | | |  
|

Db 481 AC---ACAAATTACTTAAAAGATTT-----TAGT-  
CAAGCCCCTCAACAGATTCAATTTT 431

Qy 2616 CACCT-CCCTACAGCTCCCCA-----  
CAGGAGTTTGCCAGGATGTGGGCCG--- 2661

| | | | | | | | | | | | | | | | | | | |  
Db 430  
AAAATGGCTTTTAGTTAAAAAATAAATTGAAAGTGCTTACCCAGTAAAAGAACCGAAG 371

Qy 2662 ----CATGTTC-----AAGCAATTCAACA-----  
AGTTAACTGAGGACAAGG 2699

| | | | | | | | | | | | | | | | | | | |  
| |

Db 370  
TAGTCCTGAAGTGTACGTAAGACTTTTTTACAGTTGGATCTTTGTCAAAGGGGATGGGG 311

Qy 2700 CAGACGTGC-AGTCCATCATCGGCCTGCAGCGCTTCTTCGAGACGC----  
GCATGAACGA 2754

| | | | | | | | | | | | | | | | | | | |  
| |

Db 310 GTGATGGGAGAAAGCAGCAACGACAATCAAAAAG-TTCGAGCTGCTGTGGCTAGAG-  
GA 253

Qy 2755 GGCCTTCGGTGACACCA----AGTTCTCTGCTGTGCTGGTGGAGC-  
CCCCGCCGATGAG 2808

| | | | | | | | | | | | | | | | | | | |  
| |

Db 252 CAACTTCTGTGTTTCCAGATAGGATTCT-TGCTGTAGAAATGGAAGTTCCAGCC----  
AG 198

Qy 2809 C-CTGCCTGGTGTGCTGGCCTGAGTTCCCAGGAGC-----  
TGTCTGGTGGCCCTGGT 2857

| | | | | | | | | | | | | | | | | | | |  
Db 197 CACAGCAT-----CCTG---TCCCAGTAGAGAAATGAGTTTGTGAGTTAAAC-  
AAA 150

Qy 2858  
GATGGCCCTGAGGCTGGAGCCCCCATGGCCAGCCAGCCTGGCTCTGTTCTCTGTCTCTG 2917

| | | | | | | | | | | | | | | | | | | |  
Db 149 AAAAAAATTAGATACTGGAACCC---AGGCTAGACGA----  
GGTATTGAAC----- 106

Qy 2918 TCACCCCA----  
TCCCCACTCCCCTGGTGGCCTGACTCCCACTCCCTGGTGGCCCCATCC 2973  
| | | | | | | | | | | | | | | | | | | | | |  
Db 105 -CGCGCCAGATTTCCTTGACGCCCTGTCTGCTCAGCTCGCATTCC--  
AGTAGGCCAA--- 52

Qy 2974 CCCAGTTCCTCACGATATGGTTTTTACTTCTGTGGATTTAATAAAAAAACTTCAC--  
CA 3031  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 51 --CAGT---GCTCGA---GG-----  
AATTCCGCAGCTTTTAGAGCAGAAGTAACACTTCC 5

Qy 3032 GTTC 3035  
| | |  
Db 4 GTAC 1

# RESULT 13

US-10-478-914-17  
; Sequence 17, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 17  
; LENGTH: 2198  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-17

Query Match 26.6%; Score 5207.5; DB 1; Length 2198;  
Best Local Similarity 42.2%; Pred. No. 2.6e-290;  
Matches 1241; Conservative 0; Mismatches 824; Indels 873;  
Gaps 170;

Qy 223  
CCCAGGAGGCGCGTGGCGGGCGCTCGGCCTCGCGGCGGGCGGGCGGCAGCGGCCAGCAG 282  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1 CCTA-----CT-GGTCTTGTGTGGGTGTTTTTC-----  
CAGCACGGAA- 36

Qy 283  
TTGGCGGCGAGCGCGTCTGCGCCTGCGCGGGCGGGCCCCGCGCCCTCCTCCCCCCTGGG 342  
| | | | | | | | | | | | | | | | | | | | | |  
Db 37 ---AAGTCGAGATAAT-TGCCAATGATCAG-  
GGAAACCGAACCACTCCAAGC----- 83

Qy 343  
CGCCCCCGGCGGCGTGTGAATGGCGGCCTCCGCGGCGGCAGCCTCGGCAGCAGCGGCCTC 402  
||| | ||| | || | | ||| |  
||  
Db 84 -----TATGTC-GCCTTTACGGACACTG-AACGGTTG-----  
ATC 116

Qy 403  
GGCCGCCTCTGGCAGCCCGGGCCCGGGCGAGGGCTCCGCTGGCGGCGAAAAGCGCTCCAC 462  
|| | ||| | || | | || | || | || |  
||||  
Db 117 GGT-----GATGCC-----GCAAAGAATCAAGTTGC-----  
AATGAACCCAC 154

Qy 463  
CGCCCCCTTCGGCCGCAGCCTCGGCCTCTGCCTCAGCCGCGGCGTCTCGCCCGCGGGGGG 522  
| | ||| | | ||| | || | | |  
Db 155 C-----AACACAGTTTTTG---ATGCCAA-----  
CGTCTGATTG--- 186

Qy 523  
CGGCGCCGAGGCGCTGGAGCTGCTGGAGCACTGCGGCGTGTGCAGAGAGCGCCTGCGACC 582  
| ||| || | || |||| || || |  
|  
Db 187 -GACGCAGATTTGATGATGCTGTTG-----TCCAG---  
TC 217

Qy 583  
CGAGAGGGAGCCCCGCTGCTGCCCTGTTTGCACCTCGGCCTGTAGTGCCTGCTTAGGGCC 642  
|| | | | | | |||| | || | | ||| ||  
||||  
Db 218 TGATATGAAACATTG-----GCCCTTTATG---GTGGTGAATGATGCTGGC---  
AGGCC 265

Qy 643  
CGCGGCCCCCGCCGCCCAACAGCTCGGGGGACGGCGGGGCGGCGGGCGACGGCACCGT 702  
| ||| | | ||| |||| | | | || | |  
|  
Db 266 CAAGGTCCAAGTAGAATAAA-----GGGA-----  
GAGACAAAAGCTTCTATCCAGA 313

Qy 703 GGTGGACTGTCCCGTGTGCAAGCAACAGTGCTTCT-  
CCAAAGACATCGTGGAGAATTATT 761  
|| | |||| | | || |||| |||| | || | |  
Db 314 GGAG-----GTGT-----CTTCTATGGTTCTGACAAAGA-----  
TGAAGGA----- 349

Qy 762  
TCATGCGTGATAGTGGCAGCAAGGCTGCCACCGACGCCAGGATGCGAACCAGTGCTGCA 821  
| | |||| | || | | || | || | || |  
|  
Db 350 -----AATTGCAGAA-----GCCTAC-----CTTGGGAAG---AC---  
TGTTACC 383

Qy 822 CTAGCTGTGAGGATAATGCCCCAGCCACCAGC-  
TACTGTGTGGAGTGCTCGGAGCCTCTG 880  
||||| | |||| |||| |||| | || ||| ||| ||  
Db 384 AATGCTGTG-----GTCACAG-TGCCAGCTTACTTTAATGA---  
CTCTCAGCGTC-- 429

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Qy      881
TGTGAGACCTGTGTAGAGGCGCACCAGCGGGTGAAGTACACCAAGGACCATACTGTGCGC 940
      |||||
|
Db      430 -----AGGC-----TACCAAAG---ATGCTG---
GA 449

Qy      941
TCTACTGGGCCAGCCAAGTCTCGGGATGGTGAACGTACTGTCTATTGCAACGTACACAAG 1000
      ||| || | ||||| || ||||| | | | | |
|
Db      450 ACTATTG-----CTGGTCTC-----AATGTACT-----
TAGAATTATTAATGAG 488

Qy      1001
CATGAACCCCTTGTGCTGTTTTGTGAGAGCTGTGATACTCTCACCTGCCGAGACTGCCAG 1060
      | | | || ||||| ||||| ||||| || |
|
Db      489 C-----CAACT-----GCTG-----
CTGCTATTGCTTACGG 514

Qy      1061
CTCAATGCCCAAGGACCACCAGTACCAGTTCTTAGAGGATGCAGTGAGGAACCAGCGC 1120
      || | | | ||||| || || ||||| || || |
|
Db      515 CTTA--GACAAAAAGG-----TTGGA----
GCAGAAAGAAACGTGCTC 551

Qy      1121 AAGCTCCTGGCCTCACTGGTGAAGCGCCTTGGG---
GACAAACATGCAACATTGCAGAAG 1177
      | || || ||| |||| || | || | | ||| | ||| |||||
|
Db      552 AT-CT-TTGACCTGGGAGGTG--GCACTTTTGTGTGTCAATCCT-
CACTATTGAGGATG 606

Qy      1178 AGCACCAAGGAGGT----TC-
GCAGCTCAATCCGCCAGGTGTCTGACGTACAGAAGCGTG 1232
      || | ||||| || ||||| | | || || || |||||
|
Db      607 -GAATCTTTGAGGTCAAGTCTACAGCTGGAGACACCC----
ACTTGGGTGGAGAAGATTT 661

Qy      1233 TG-CAAGTGGATGTCAAGATGGCCATCCTGCAGATCATGAAGGAGCTGA--
ATAAGCGGG 1289
      || ||| | |||| || | ||| ||||| |||||
|
Db      662 TGACAA-----CCGAATGGTCAAC-----
CATTTTATTGCTGAGTTTAAGCGCA 705

Qy      1290
GCCGTGTGCTGGTCAATGATGCCCAGAAGGTGACTGAGGGGCAGCAGGAGCGCCTGGAGC 1349
      | | | |||| |||| | || | || | ||| |||||
|
Db      706 AGCATAAGAAGGACAT-----CAGTGAG-AACAAGAGAGCTGTAAGA-
CGCCT----- 751

Qy      1350
GGCAGCACTGGACCATGACCAAGATCCAGAAGCACCAGGAGCACATTCTGCGCTTTGCCT 1409
      | | |||| | | | || | || | || |
|
Db      752 --CCGTACTG-----

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CCATTCTAC 1228

Qy 1903 TGAG--

GACTACAACCTTATTGTTATTGAACGTGGCGCTGCCGCTGCAGCTACCGGCCAG 1960

|||| | | | | | | | | | | | | |

Db 1229 CAAGCAGACACAGACCTT-----CACTACCTATTCTG---

ACAACCAG 1268

Qy 1961 CCAGGGACTGCGCCTGCAG-----GAACCCCTG-

GTGCCCCACCCCTGGCTGGCATGGC 2013

| | | | | | | | | | | | | | | | | |

Db 1269 CCTGGTG-TGCTTATTCAAGTTTATGAAGGCGAGCGTGCCATGACAAAGGATAACA--  
AC 1325

Qy 2014 C--

ATTGTCAAGGAGGAGGAGACGGAGGCTGCCATTGGAGCCCCTCCTACTGCCACTGAG 2071

| | | | | | | | | | | | | | | | | |

Db 1326 CTGCTTGGCAAGTTTGA-----ACT--

CACAGGCATACCTCCTGCACCCCGAGGT 1373

Qy 2072 GGCCCTGAGACCAAACCTGT-

GCTTATGGCTCTTGGGAGGGTCCTGGTGCTGAGGGTCC 2130

| | | | | | | | | | | | | | | | | |

Db 1374 GTTCCTCAGATTGAA---GTCACCTTTTGAC-----

ATTGATGCCAATGGTAT 1417

Qy 2131

CCGCCTGGCCTCACCTAGTGGCAGCACCAGCTCAGGGCTGGAGGTGGTGCTCCTGAGGG 2190

| | | | | | | | | | | | | | | | | |

Db 1418 ACTCAATGTCTCTGCT-GTGG--

ACAAGAGTACGGGAAAAGAGAACAAAGATTACT----A 1470

Qy 2191

TACCTCAGCCCCAGGTGGTGGCCCGGGAACCCTGGATGACAGTGCCACCATTGCGGTGT 2250

| | | | | | | | | | | | | | | | | |

Db 1471 TCACTAATGACAAG-----GGCCGTTTGTAGCAAGGAAGACATTG--AACGTATG----  
GT 1519

Qy 2251 CTGCCAGAAGCCAGGCGAT-----

CTGGTTATGTGCAACCAGTGTGAGTTTTGTTTCCA 2304

| | | | | | | | | | | | | | | | | |

Db 1520 C--CAGGAAGCTGAGAAGTACAAAGCTGAAGATGAG-AAGCAGAGGGA-

CAAGGTGTCAT 1575

Qy 2305

CCTGGACTGTACCTGCCGGCCCTGCAGGATGTACCAGGGGAGGAGTGAGCTGCTCACT 2364

| | | | | | | | | | | | | | | | | |

Db 1576 CCAAGAAT-TCACTTG--AGTCCT-----ATGC---  
CT 1602

Qy 2365

CTGCCATGTGCTCCCTGACCTGAAGGAGGAGGATGGCAGCCTCAGCCTGGATGGTGCAGA 2424

| | | | | | | | | | | | | | | | | |

Db 1603 TCAACATGAAAGC----AACTGTTGAAGATG---AGAACTTCA-----  
AGG 1642

```

Qy          2425
CAGCACTGGCGTGGTGGCCAAGCTCTCACCAGCCAACCAGCGGAAATGTGAGCGTGTACT 2484
      ||  |  |  ||  |  |  |  ||  |||  |||  ||
|
Db          1643 CAAGATTAACGATGAG-----
GACAAACAGAAGA-----T 1672

Qy          2485 GCTGGCCCTATTCTGTGCACGAACCCTGCCGCCCCCTGCATCAGCTGGCT---
ACCGACTC 2541
      ||||  |  |||  |  |||  ||||  |||||  ||  ||

||
Db          1673 TCTGGACAAG---TGTAATGAAAT-----
TATCAACTGGCTTGATAAGAATC 1716

Qy          2542
CACCTTCTCCCTGGACCAGCCCGGTGGCACCCTGGATCTGACCCTGATCCGTGCCCGCCT 2601
      ||  ||  ||  ||  |  ||  |  |  ||  |||  |  |  |  |  |  |  |  |
Db          1717 AGACTGCT-----GA-----GAAGGAA-----
GAATTTGAACATCAACAGAAAGAG--- 1757

Qy          2602 CCAGGAG-
AAGTTGTACCTCCCTACAGCTCCCCACAGGAGTTTGCCAGGATGTGGGCC 2660
      |  |||  ||||  |||  ||  |||  ||  ||  |  ||  |||  ||  ||  ||
Db          1758 -CTGGAGAAAGTTTGCAAC-CCCATCATCACCAAGCTGTA-----
CCAGAGTGCAGGAG 1809

Qy          2661 GCATGTTCAAGCAATTCAACAAGTTAACTGAGG----
ACAAGGCAGACGTGCAGTCCATC 2716
      |||||  |  ||  |  |  |  |||  ||  |  ||  |  |  ||  |||

|
Db          1810 GCATG--CCAGGAGGAATGC-----CTGGGGGATTTCCTGGTGGTGGAGC--
TCCTCC 1858

Qy          2717 ATCGGCCTGCAGCGCTTCTTCGAGACGCG-
CATGAACGAGGCCTTCGGTGACACCAAGTT 2775
      ||  |  |  |  ||||  ||  |  |  |  |||  |  ||||  |  |  |  |  ||||
Db          1859 CTCTG---GTGGTGCTTCCTCAGGGCCCCACCATTTGAAGAGG---
TTGATTAAGCCAA--- 1909

Qy          2776 CTCTGCTGTGCTGGTGGAGC-----
CCCCGCCGATGAGCCTGCCTGGTGCTGGCCTGAG 2829
      |  |||  |  ||  |||  ||  ||  |  |  |  |  ||  |  |  |||

|
Db          1910 --CC-AAGGTAGATGTAGCATTGTTCCACACATTTAAAC-ATTTGAAG--
GACCTAAA 1963

Qy          2830
TTCCCAGGAGCTGTCTGGTGGCCCTGGTGATGGCCCCCTGAGGCTGGAGCCCCCATGGCCA 2889
      |||  ||  |  |  |||  ||||  ||  |  |  |||  ||  ||  |

|
Db          1964 TTCGTAGCAAAT-TCT-GTGGC---AGTTTTAAAAAGTTAAGCTG-----
CTATAGTAA 2012

Qy          2890
GCCCAGCCTGGCTCTGTTCTCTGTCTGTACCCCCATCCCCACTCCCCTGGTGGCCTGAC 2949
      |  |  |||  ||||  |  ||  |  |  |  |  ||  ||  ||  ||  |

|
Db          2013 G--T TACTGGGC---ATTCTCAATACT-
TGAATATGGAACATATGCACAGGGGAAGGAAA 2066

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Qy      2950 TCCCACTCCCTGGTGGCCCCATCCCCAGTTTCCTCACGATATGGTTTTTT----
ACTTCTG 3005      |  |  |      |  |  |      |  |  |  |  |  |  |  |  |  |  |
Db      2067 TAACATT-----GCACTTT-----
ATAAACTGTATTGTAAGTGGAAAAATGCAA 2111

Qy      3006 TGGATTTAATAAAA-----AAACTT--CACCAGTTCAAAAAAAAAAAAAAAAAAAAA
3056      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
Db      2112 TGTCTTAAATAAAACTATTTAAAAATTGGCACCATAAAAAAAAAAAAAAAAAAAAAAAAAA
2169

```

Db 95 AATC---TGGC-----  
 GCGGTTCAATA----- 113

Qy 289  
 GCGAGCGCGTCTGCGCGGCGGGCCCCGCGCCCCTCCTCCCCCCTGGGCGCCCC 348  
 | | | | | | | | | | | | | | | | | | | | | |

Db 114 -C---CTCGTCT-AGCCT-----GGGTTCC-  
 AGTATCTAATTTTTTTTTTG----- 153

Qy 349  
 CGGCGGCGTGTGAATGGCGGCCTCCGCGGCGGCAGCCTCGGCAGCAGCGGCCTCGGCCGC 408  
 | | | | | | | |

Db 154 -----TTTTAACTGACAACTC-----  
 ATTT 174

Qy 409  
 CTCTGGCAGCCCGGGCCCGGGCGAGGGCTCCGCTGGCGGCGAAAAGCGCTCCACCGCCCC 468  
 | | | | | | | | | | | | | | | | | | | | | |

Db 175 CTCT-----ACTGGGACAGGAT---GCTGTGCTGGCTG-GAA---  
 GTTCCA-----T 214

Qy 469 TTCGGCCGC-  
 AGCCTCGGCCTCTGCCTCAGCCGCGGCGTCTGCGCCGCGGGGGGCGGCG 527  
 | | | | | | | | | | | | | | | | | |

|  
 Db 215 TTCTACAGCAAGAATC-----CTATCT-GGAAACACAGAAGTTGTCCTC-----  
 TAG 260

Qy 528 CCGAGGC-GCTGGAGCTGCTGGAGCACTGC--  
 GGCGTGTGCAGAGAGCGCCTGCGACCCG 584  
 | | | | | | | | | | | | | | | | | | | | | |

|  
 Db 261 CCACAGCAGCTCGAACTTTT-----TTGATTGTCGT-TGCTGCTTTCTCC--  
 CATCAC- 310

Qy 585  
 AGAGGGAGCCCCGCTGCTGCCCTGTTTGCACTCGGCCTGTAGTGCCTGCTTAGGGCCCCG 644  
 | | | | | | | | | | | | | | | | | | | | | |

Db 311 -----CCCCATC-----CCCTTTTGACA-----AAGATCCAAC---  
 GTAAAA 345

Qy 645 CGGCCCCCGCCGCCGCAACAGCTCGGGG-GACGGCGGGGC---  
 GGCGGGCGACGGCAC- 699  
 | | | | | | | | | | | | | | | | | | | | | |

| | | |  
 Db 346 AGTCTTACG-----TAACAGTTCAGGACTACTTCGGTTCTTTTACTGG-  
 GTAAGCACT 397

Qy 700 --CG-----TGGTGGACTGT---CCCGTGTGCAA--GCAACAGT-----  
 GCTTCTC 738  
 | | | | | | | | | | | | | | | | | | | | | |

|  
 Db 398  
 TTCAATTTTTTTTTTTAACTAAAAGCCATTTTAAATTGAATCTGTTGAGGGGCTTGAC 457

Qy 739  
 CAAAGACATCGTGAGAATTATTTTCATGCGTGATAGTGGCAGCAAGGCTGCCACCGACGC 798  
 | | | | | | | | | | | | | | | | | | | | | |

|  
 Db 458 TAAATCTTTTAAGTAATTTGTGTAAT--GGAATACTGTCAG--

TGGATTTTTTCGTCTC 513

Qy 799 C---CAGGATGCGAACCAGTG----CTGCAC--  
TAGCTGTGAGGATAATGCCCCAGCCAC 849

| | | | | | | | | | | | | | | | | |  
| | |

Db 514 ATTTCTGCACGTGCTCCTTTGTTCTCAGAACAGAAGCTTT-----  
TTATACACATCCCAT 568

Qy 850 CA-  
GCTACTGTGTGGAGTGCTCGGAGCCTCTGTGTGAGACCTGTGTAGAGGCGCACCAGC 908

| | | | | | | | | | | | | | | | | |  
Db 569 AACGCAGCTGGAGAGAGTTAT-GAAG--TCAGT-----TATTATAAGGAACA-  
CAAA 616

Qy 909  
GGGTGAAGTACACCAAGGACCATACTGTGCGCTCTACTGGGCCAGCCAA-----G 958

| | | | | | | | | | | | | | | | | |  
Db 617 GGTTGCTTT-----CCATTCTTTGC-CTTTA----  
GATAATTAATTTTTTTGTTT 661

Qy 959  
TCTCGGGATGGTGAACGTACTGTCTATTGCAACGTACACAAGCATGAACCCCTTGTGCTG 1018

| | | | | | | | | | | | | | | | | |  
|

Db 662 TCTTAAAATGGAGTATTTAAAGAAGGAAGAAA--TTCACAAGAAATAAACTGTTGG--  
AG 717

Qy 1019 TTTTGTGAGAGCTGTGATACTCTCACCTGCCGAGACTGCCAGCTCAA-----  
TGCCC 1070

| | | | | | | | | | | | | | | | | |  
| |

Db 718 AATTTAGAAAAGTTTGAAGTTTTTACC-ACC---  
TTTTCTATCTCTAGTTTTGTGTGGCC 773

Qy 1071  
ACAAGGACCACCAGTACCAGTTCTTAGAGGATGCAGTGAGGAACCAGCGCAAGCTCCTGG 1130

| | | | | | | | | | | | | | | | | |  
|

Db 774 A-----AACACTTGTGCCG---CCTGGG---GCGGTGGGGGTAGAG-GCAAG--  
CATAG 818

Qy 1131 CCTCACTGGTGAAGCGCCTTGGGGACAAACATGCAACATTGCAGAAGAGC---  
ACCAAGG 1187

| | | | | | | | | | | | | | | | | |  
| |

Db 819 AC-----AGAGAGGAACT---AAGCCAGACATGGACAAAGGC--  
ACGAGCCAAAACCAGA 868

Qy 1188 AGGTTC--  
GCAGCTCAATCCGCCAGGTGTCTGACGTACAGAAGCGTGTGCAAGTGGATGT 1245

| | | | | | | | | | | | | | | | | |  
| |

Db 869 CAGTCCTGGCCGTTTCGATAGGCCAG-----  
CAGTGGGTG- 902

Qy 1246  
CAAGATGGCCATCCTGCAGATCATGAAGGAGCTGAATAAGCGGGGCCGTGTGCTGGTCAA 1305

| | | | | | | | | | | | | | | | | |  
Db 903 -AGACAGGTCAGCCAGC-----TGCAGGGGCGG---GAGCGGGG----

GGGCGGGTAGG 948

Qy 1306  
TGATGCCCAGAAGGTGACTGAGGGGCAGCAGGAGCGCCTGGAGCGGCAGCACTGGACCAT 1365  
| | | | | | | | | | | | | | | | | | | | | |

Db 949 ----GACATGGATGTG--TGAGGTGCT-CATGCGTGC-----  
GATCGT 984

Qy 1366 GACCAAGATCCAGAAGC-  
ACCAGGAGCACATTCTGCGCTTTGCCTCTTGGGCTCTGGAGA 1424  
| | | | | | | | | | | | | | | | | | | | | |

Db 985 GA-CTAGATTCTGAAACTGCCAG--  
CCATTTTCCCAGCTCCGCTTTGTGCAATCTAAAGG 1041

Qy 1425  
GTGACAACAACACAGCCCTTTTGCTTTCTAAGAAGTTGATCTACTTCCAGCTGCACCGGG 1484  
| | | | | | | | | | | | | | | | | | | | | |

Db 1042 -----AATGCATCCC-----CTCTGAAGCAG-TCT--TGCCAG-  
AGCCTAGTG 1080

Qy 1485 CCCTCAAGATG-  
ATTGTGGATCCCGTGGAGCCACATGGCGAGATGAAGTTTTCAGTGGGAC 1543  
| | | | | | | | | | | | | | | | | | | | | |

Db 1081 AGGGAGAGAAGTATGGTAAATACC-----ACAACAT-----ATG--  
GAATCAG----- 1121

Qy 1544 CTCAATGCCTGGACCAAGAGT--GCCGAGGCCTTTGGCAAGATTGTGGCAG-----  
AGC 1595  
| | | | | | | | | | | | | | | | | | | | | |

Db 1122 -  
AAAATACCGGGAAGTGGAGTGGGCAAGGGGGAATGCAGAGGGTGTGGAAATTTTTTAGT 1180

Qy 1596 GTCCTGGCACTAACTCA---ACAGGCCCTGCACC---CATGGCCCCTCCAAGAGC--  
CCC 1647  
| | | | | | | | | | | | | | | | | | | | | |

Db 1181  
GATCTGGAATGTGTTGAGTGACAGGAAGTGCCCCAAGCTTCTCCCCCACCACCTCTTCTC 1240

Qy 1648 AGG-GCCCCTGAGCAAGCAGGGCTCTGG----  
CAGCAGCCAGCCCATGGAGGTGCAGGAA 1702  
| | | | | | | | | | | | | | | | | | | | | |

Db 1241  
AGTCGCGCCTGCTTTTGTCTAACTCTTGTAACTTACACACTACTGCTTACAAAGCTG--- 1297

Qy 1703  
GGCTATGGCTTTGGGTCAGGAGATGATCCCTACTCAAGTGCAGAGCCCCATGTGTCAGGT 1762  
| | | | | | | | | | | | | | | | | | | | | |

Db 1298 ---TCTGAGTTTAAGACA--AAAAGAAACCTA--AAAGT-----  
CTCCTTACTTC---- 1340

Qy 1763  
GTGAAACGGTCCCCTCAGGTGAGGGCGAGGTGAGCGGCCTTATGCGCAAGGTGCCACGA 1822  
| | | | | | | | | | | | | | | | | | | | | |

Db 1341 -----ATAGTAC--CTGTGATATGGAAGGAATG-----  
TAAAAGCA----- 1374

Qy 1823 GTGAGCCTTGAACGCCTGGACCTGGACCTCACAGCTGACAGCCAGCCACCCGTCTTCAAG 1882  
 ||| ||| | ||| | ||| | | | | |  
 Db 1375 -TGACCCTTTAA-GCCT----  
 ATGGACATTTTTTCAGGTATACAGGAGAAAGATAAAATA 1428

Qy 1883 GTCTTCCCAGGCAGTACCACTGAGGACTACAACCT-  
 TATTGTTATTGAACGTGGCGCTGC 1941  
 | ||| | | | | | | | | | |  
 Db 1429 ATTTTCC---ACAG-  
 AAAAATGAGAATTATGAATTATATAGTT----- 1467

Qy 1942 CGCTGCAGCTACCGGCCAGCCAGGGACTGCGCCTGCAGGAACCCCTGGTGCCCCACCCCT 2001  
 ||| | | | | | | | | | | | |  
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 Db 1468 -----CAGGTTCC-----  
 AAATCTAATTTTTAAAGAATTCTGATTCTGCTACACT 1513

Qy 2002 GGCTGGCATGGCCATTGTCAAGGAGGAGGAGACGGAGGCTGCCATTGGAGCCCCTCTAC 2061  
 | | | | | | | | | |  
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 Db 1514 -----TTACAAATGCTTAGG-----TTGGT-----  
 TCCTAA 1539

Qy 2062 TGCCACTGAGGGCCCTGAGACCAAACCTG--  
 TGCTTATGGCTCTTGCGGAGGGTCTTGGT 2119  
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 Db 1540 T----TTGAAG-----GAGACTTGTTTTATTTGGTTAATGC-  
 ATTGCATTTGAAC TTGTT 1589

Qy 2120 GCTGAGGGTCCCCGCCTGGCCTC--  
 ACCTAGTGGCAGCACCAGCTCAGGGCTGGAGGTGG 2177  
 | | | | | | | | | | | | | | | |  
 |  
 Db 1590 TCT-ATTTTCTTTGCATAAATTTGGACTTTG-GGAGAAAAATGCAAAGTAAT-  
 AAGTAGA 1646

Qy 2178 TGGCTCCTGAGGGTACCTCAGCCCCAGGTGGTGGCCCGGGAACCCTGGAT--  
 GACAGTGC 2235  
 || | | | | | | | | | | | | | | | |  
 Db 1647 ATGCACTTGGGGGAAAAAAGG----AGGATTTTCCC----  
 TTCATGGGTTGGAAAGT-- 1696

Qy 2236 CACCATTTGCCG---TGTCTGCCAG--  
 AAGCCAGGCGATCTGGTTATGTGCAACCAAGTGT 2290  
 ||| | | | | | | | | | | | | | |  
 Db 1697 ---ATTTTAAAGGGTTGTTTTCTTGAAAAACAAGCTCTCT-----  
 CTTAC----- 1739

Qy 2291 GAGTTTTGTTTC--  
 CACCTGGACTGTACCTGCCGGCCCTGCAGGATGTACCAGGGGAGG 2348  
 |||| | | | | | | | | | | | | | |  
 Db 1740 -----TTTCTGCATCTATGCTATAA--AGATAACTATGC----  
 TATAATAAATGTAA 1785

Qy 2349 AGTGGAGCTGCTCACTCTGCCATGTGCTCCCTGACCTGAAGGAGGAGGATGGCAG---

CC 2405  
 |  
 Db 1786 GGTAGA-----AAACTTTAAAGA-  
 GAAAATAACAGTGTTT 1819

Qy 2406 TCAGCCTGGATGG-  
 TGCAGACAGCACTGGCGTGGTGGCCAAGCTCTCACCAGCCAACCAG 2464  
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 Db 1820 TAAG--TGAAAAGCTAC--TTAGCATTTTC-----CCAAACTCACACAT---  
 TATCAA 1865

Qy 2465  
 CGGAAATGTGAGCGTGTACTGCTGGCCCTATTCTGTACGAACCCTGCCGCCCCCTGCAT 2524  
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 Db 1866 CAGAAA-----CACTA-AAAATTAAGAGAAAAGCGGCCAACT-  
 AAT 1904

Qy 2525 CAGCTGGCTACCGACTCCACCTTCTCCCTGGACCAGCCCCG--  
 TGGCACCTGGATCTG- 2581  
 | | | | | | | | | | | | | | | | | |  
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 Db 1905 TAAATAGCTA-----GCCTTATTTTGGG---  
 GGTATGGGATAGAAAATTAAGTGTA 1953

Qy 2582 --ACCCTGATCCGTG-----CCCGC---CTCCAGGAGAAGTT----GTCA-  
 CCT 2620  
 | | | | | | | | | | | | | | | | | |  
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 Db 1954  
 ATAAAATGATACTTGGAATGTTTCTCCCTCGTACCACAAAGGATGTTAGTGGTCAGCCT 2013

Qy 2621  
 CCCTACAGCTCCCCACAGGAGTTTGCCAGGATGTGGGCCGATGTTCAAGCAATTCAAC 2680  
 | | | | | | | | | | | | | | | | | |  
 Db 2014 ACGAGTTAATCCTTCCTAG-----CATGGCTCTGAGCC-----  
 TTCATGCCGAGCAG- 2060

Qy 2681 AAGTTAACTGAGGACAAGGC-AGACGTGCAGTCCA-  
 TCATCGGCCTGCAGCGCTTCTTCG 2738  
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 Db 2061 ACGTTATTC----ACATGACGATTTCGAAAAGTCCATTCATATATCT----  
 CGCTACCTGG 2112

Qy 2739  
 AGACGCGCATGAACGAGGCCTTCGGTGACACCAAGTTCTCTGCTGTGCTGGTGGAGCCCC 2798  
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 Db 2113 ATTTG-----AATAGAAACC-----AGACAGCAA-TTCTTT--AGTTCC-----  
 AGCCAC 2154

Qy 2799  
 CGCCGATGAGCCTGCCTGGTGCTGGCCTGAGTTCCAGGAGCTGTCTGGTGGCCCTGGTG 2858  
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 Db 2155 C----ATTGCGC--CC----ACTGG-----  
 ACAATAGCGATTGTAGCACAG--- 2192

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Qy      2859
ATGGCCCCTGAGGCTGGAGCCCCCATGGCCAGCCCAGCCTGGCTCTGTTCTCTGTCCTGT 2918
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db      2193 --AGTCAC--AGGCTG-----
TGGGACACAAAGCTTGGAGCTG----- 2226

Qy      2919 CACCCCATCCCCACTCCCCTGGTGGC--
CTGACTCCCCTCCCTGGTGGCCCCATCCCCC 2976
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Db      2227 -----
CAGAAAGATGGGGGATTTCAGAGAACAGGAAATTACAGGCTCGATGCAC- 2274

Qy      2977
AGTTTCCTCACGATATGGTTTTTACTTCTGTGGATTTAATAAAAAAACTTCACCAGTTCA 3036
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Db      2275 ---TCCTGGCAGCTCTGAGAATACAAAAAAAAAAAAAAAAAAGGC--
CACATGTGCT 2329

Qy      3037 AAA 3039
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Db      2330 CGA 2332

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RESULT 15

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US-10-478-914-3/c
; Sequence 3, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 3
; LENGTH: 2083
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-3

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Query Match      24.2%; Score 4731.5; DB 1; Length 2083;
Best Local Similarity 38.9%; Pred. No. 1.3e-262;
Matches 1192; Conservative 0; Mismatches 810; Indels 1065;
Gaps 173;

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Qy      47 CTAGCAGCAGTTGGCCGTGCCGTAGCAGCGTCCCGC-
GCGCGGCGGGCAGCGGCCAGGA 105
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Db      2083 CTAGC-----GGCC-----GCGACCTGCAGCTCG-----
AGCACATGT 2051

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Qy 106 GGC CGCTGGT GC GGGT-----  
TTCGCGCGCGGCTGAGGAAGAAGCGCGGGCGG----- 153  
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Db 2050 GGC-CTTTTTTTTTTTTTTTTATTTTGC--CTTCT-----  
TGCTCTGGTGGTAGT 2002

Qy 154  
CGCCTTCGGGAGGCGAGCAGGCAGCAGTTGGCCGTGCCGTAGCAGCGTCCC GCGCGCGGC 213  
| | | | | | | | | | | | | | | | | | | |  
Db 2001 CTCCTACTATAAACATG-----ATTTCCTT-----  
CTTCCCTT----- 1968

Qy 214  
GGGCAGCGGCC CAGGAGGCGCGTGGCGGCGCTCGGCCTCGCGGCGGCGGCGGCAGCG 273  
| | | | | | | | | | | | | | | | | | | |  
Db 1967 ---CAGAGTCC----TGTC---AATCTTTACTTTTTTCTCATTAAT--  
ATACAGAA GTT 1920

Qy 274  
GCCCAGCAGTTGGCGGCGAGCGCTCTGCGCCTGCGCGGCGGGCCCCGCGCCCCCTCCTCC 333  
| | | | | | | | | | | | | | | | | | | |  
Db 1919 ATACTACAGATACATTCAAGCTCAT----  
GACTGCTAAAAACTTCCTGAAATGAGCCTTA 1864

Qy 334 CCCCTGGGCGCC-  
CCCGGCGGCGTGTGAATGGCGGCTCCGCGGCGGCAGCCTCGGCAG 392  
| | | | | | | | | | | | | | | | | | | |  
Db 1863 ATTCAT--ACGAATCATTTCTATTGT-----  
TCTTTTTTTTTTGAGACAGACT----- 1817

Qy 393  
CAGCGGCCTCGGCCGCTCTGGCAGCCCGGGCCCGGGCGAGGGCTCCGCTGGCGGCGAAA 452  
| | | | | | | | | | | | | | | | | | | |  
Db 1816 ---CTTACTCTGTGCGCC-CAGGCTG-  
GAGTGCACTGGCATGATCTCGGCTCACTGCAA-- 1764

Qy 453 AGCGCTCCACCGCCCC-----  
TTCGGCCG CAGCCTCGGCCTCTGCCTCAGCCGCGGCGTC 507  
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Db 1763 -----CCTCTGCCTCACGAGTTAGGT--  
CAAGCAATTCTTCTGCCTCAGCCTC----- 1718

Qy 508  
GTGCCCCGCGGGGGGCGGCGCCGAGGCGCTGGAGCTGCTGGAGCACTGCGGCGTGTGCAG 567  
| | | | | | | | | | | | | | | | | | | |  
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Db 1717 -----CCGAGGAGCTAGGATTACAGGT-CCCTGCCAC-----  
CA- 1685

Qy 568 AGAGCGCTGCG-----ACCCGAGAGGGAGCCCCGCC-  
TGCTGCCCTGT 610  
| | | | | | | | | | | | | | | | | | | |  
Db 1684 ----  
TG CCTGAGTAATTTTGTATTTTAGTAGAGATGGGGTTTCACCATGTTAGCCAAG 1629

Qy 611 TTGCACTCGGCCTGTAGTGCCTG--CTTAG--  
GGCCCGCGGCCCCGCGCCGCCAACAG 666  
| | | | | | | | | | | | | | | | | | | |  
||





TC-----C 1200

Qy 1201

AATCCGCCAGGTGTCTGACGTACAGAAGCGTGTGCAAGTGGATGTCAAGATGGCCATCCT 1260

| | | | | | | | | | | | | | | |

Db 1199 ATTATGCCAGAT-----AGTTT-----

TAAATGTCACAA----- 1171

Qy 1261 GCAGATCATGAAGGAGCTGAATAAGCGGGGCCGTGTGCTGGTCAATGATGCC-----

AG 1315

| | | | | | | | | | | | | | | |

| |

Db 1170 --AGAAAAAGGGGAGC--AATCAG-----ATAGTGATGG---

AAGTTACACTCTAGAG 1124

Qy 1316 AAGGTGACTGAGGGGCAGCAGGAG---CGCCT-GGAG---CGGCAGCACTG-

GACC--- 1363

| | | | | | | | | | | | | | | |

Db 1123 AGGGT-----

GGACAGAAAAAGTTTCTCTTAGGAGATGACATCTGAACAGAGATCTAA 1071

Qy 1364

ATGACCAAGATCCAGAAGCACCAGGAGCACATTCTGCGCTTTGCCTCTTGGGCTCTGGAG 1423

| | | | | | | | | | | | | | | |

|

Db 1070 ATGACTGAGTAC---AAACCCAATGGAAAA---GTGATTGG-----

TGTGTTG 1028

Qy 1424

AGTGACAACAACACAGCCCTTTTGCTTTCTAAGAAGTTGATCTACTTCCAGCTGCACCGG 1483

| | | | | | | | | | | |

Db 1027

TGAAACAGCAACACAGCCAGTTG----- 1004

Qy 1484 GCCCTCAAGATGATTGTGGATCCCGTGGAGCCACATGGC-

GAGATGAAGTTTCAGTGGGA 1542

| | | | | | | | | | | | | | | |

Db 1003 ----ACTAGATGA-----GTAGATCAGAATGACTGAGGTGGG---

ACTGTGG-- 964

Qy 1543

CCTCAATGCCTGGACCAAGAGTGCCGAGGCCTTTGGCAAGATTGTGGCAGAGCGTCCTGG 1602

| | | | | | | | | | | |

| | | |

Db 963 --TCA-----TCAAAGAGATCAGA-----GAGGTAG-----

CCTGG 935

Qy 1603 CACTAACTCAACAGGCC-

CTGCACCCATGGCCCCTCCAAGAGCCCCAGGGCCCCCTGAGCA 1661

| | | | | | | | | | | | | | | |

Db 934 GA-----AGGCCACATCAGAAATGTCCTT-----

TGGGCCTCTGTAAG 896

Qy 1662

AGCAGGGCTCTGGCAGCAGCCAGCCCATGGAGGTGCAGGAAGGCTATGGCTTTGGGTCAG 1721

| | | | | | | | | | | |

| | | |

Db 895 AGC---GTTTTG--AAAAACAGTTCT-----GAGCA--AAGGTTA-----

GTCAT 857

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Qy          1722
GAGATGATCCCTACTCAAGTGCAGAGCCCCATGTGTCAGGTGTGAAACGGTCCCGCTCAG 1781
|
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Db          856 TTAAGTTGACTTACTCTTTAGAAAGGATCACTT-TGGCTATTGAGTGGCAAAC---
AACTG 801

Qy          1782
GTGAGGGCGAGGTGAGCGGCCTTATGCGCAAGGTGCCACGAGTGAGCCTTGAACGCCTGG 1841
| |
| |
Db          800 GAGA---AGTGGTTAGGGG-----AGCACTGTGGGC-----AGGAATAGAA-----
GG 761

Qy          1842
ACCTGGACCTCACAGCTGACAGCCAGCCACCCGCTCTTCAAGGTCTTCCCAGGCAGTACCA 1901
| | | | | | | | | |
Db          760 A---GGA---AAAGCAGACTG-GAGCC-----TAATC-----
CAGTACTT 728

Qy          1902
CTGAGGACTACAACCTTATTGTTATTGAACGTGGCGCTGCCGCTGCAGCTACCGGCCAGC 1961
| | | |
| |
Db          727 CAGATGA-----
GAAATGACAGATTTGC 705

Qy          1962 CAGGGACTGCG---
CCTGCGAGGAACCCCTGGTGCCCCACCCCTGGCTGGCATGGCCATTG 2018
| | | | | | | | | |
Db          704 CTGGTACATCATTTTCCT-----ATCCCT--
TTACTTATAACTTATTGGTGTATTTTAT 653

Qy          2019 TCAAGGAGGAG-----
GAGACGGAGGCTGCCATTGGAGCCCCCTCCTACTGCCACTGAGG 2072
| | | | | | | | | |
Db          652 TTAAAGTGTAATTTTTTATAAATGAAGCATAATTTGAAG-----
ATTGA-- 609

Qy          2073
GCCCTGAGACCAAACCTGTGCTTATGGCTCTTGGCGAGGGTCTGCTGGTGCTGAGGGTCCCC 2132
| | | | | | | | | |
| |
Db          608 ----TATGTTGCGACTTGTGTTTT---CTATT-----ATCATGGTGTGTC-----
TCTCC 568

Qy          2133
GCCTGGCCTCACCTAGTGGCAGCACCAGCTCAGGGCTGGAGGTGGTGGCTCCTGAGGGTA 2192
| | | | | | | | | |
| |
Db          567 ACATACCTTTTCC-----CTTTAGTTCT-----
GCTTCTTATTGTG 532

Qy          2193
CCTCAGCCCCAGGTGGTGGCCCCGGAACCCCTGGATGACAGTGCCACCATTTGCCGTGTCT 2252
| | | | | | | | | |
| | |
Db          531 CT----CCTCAAGT-----CT--ATTTTTGT----TCTTTTCCC---
TCT 500

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Qy 2253 GCCAGAAGCCAGGCGATCTG--  
GTTATGTGCAACCAGTGTGAGTTTTGTTTCCACCTGGA 2310  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 499 AC-----TTCTACTGTTTTGAACTGTATATGCTATTTCTATTT-  
TGCCAGGA 454

Qy 2311  
CTGTCACCTGCCGGCCCTGCAGGATGTACCAGGGGAGGAGTGGAGCTGCTCACTCTGCCA 2370  
| | | | | | | | | | | | | | | | | | | | | |  
Db 453 --GTTACC-----CCCT-----  
TCAATTTTCTGT 433

Qy 2371  
TGTGCTCCCTGACCTGAAGGAGGAGGATGGCAGCCTCAGCCTGGATGGTGCAGACAGCAC 2430  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 432 TGTACTCTCT-----CAGTCTCA-----  
AACAC 410

Qy 2431  
TGGCGTGGTGGCCAAGCTCTCACCAGCCAACCAGCGGAAATGTGAGCGTGTACTGCTGGC 2490  
| | | | | | | | | | | | | | | | | | | | | |  
Db 409 ATAC-----CCATGCTCTCTTC-----  
TGTCTTTCTCTT 381

Qy 2491 CCTATTCTGTACGAACCCTGCCGCCCCCTGCATCAGCTGGCTACCGACTCC-  
ACCTTCT 2549  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 380 CATAT-----CATCTTCTAGAATTAGTT--CTACC----  
CCGATTTTCT 343

Qy 2550  
CCCTGGACCAGCCCGGTGGCACCCCTGGATCTGACCCTGATCCGTGCCCCGCTCCAGGAGA 2609  
| | | | | | | | | | | | | | | | | | | | | |  
Db 342 ACC-----  
AATTTATTTTATTTTCCAATCAGTACATTGATTAG---- 305

Qy 2610  
AGTTGTACCTCCCTACAGCTCCCCACAGGAGTTTGCCAGGATGTGGGCCGCATGTTCA 2669  
| | | | | | | | | | | | | | | | | | | | | |  
Db 304 ATTTATCA----ATATGTTTTACCA----  
ATTTTATCATTTTTTTTTGGAGGCTTGTT-- 256

Qy 2670  
AGCAATTCAACAAGTTAACTGAGGACAAGGCAGACGTGCAGTCCATCATCGGCCTGCAGC 2729  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 255 ----ATTTA--AGGTTTATT-----TTTCTTGAGTACAT-----  
CCTTCAGA 219

Qy 2730  
GCTTCTTCGAGACGCGCATGAACGAGGCCTTCGGTGACACCAAGTTTCTGCTGTGCTGG 2789  
| | | | | | | | | | | | | | | | | | | | | |  
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Db 218 AGTTCTTTCA-----GCAAGAAC-----TCATGGTTGTTA-----ATCTTTG-----  
AG 180

Qy 2790

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TGGAGCCCCCGCCGATGAGCCTGCCTGGTGTGGCCTGAGTTCCCAGGAGCTGTCTGGTG 2849
      |           ||  ||  |  |||||  |           ||||  ||  ||
Db      179 T-----CCTTTG----TTTCTGGTGTTTTAACTTTTTTCCC-----
CTCACT---- 143

Qy      2850 GCCCTG-
GTGATGGCCCCCTGAGGCTGGAGCCCCCATGGCCAGCCCAGCCTGGCTCTGTTC 2908
      |  ||  ||  ||  |  |  ||||  |||  |  |||  ||||  |  |
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Db      142 --CTTGAGTAATAG----TTTAGCTGGG-----CAT-AAAATTTTCAATTGGCAGT-
TAC 96

Qy      2909
TCTGTCTGTACACCCATCCCCACTCCCCTGGTGGCCTGACTCCCCTCCCTGGTGGCCC 2968
      |  |  |  ||           ||||  |  |  ||           ||  ||||  ||
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Db      95 TTTTCCTTGG-----CACTACGAAGATG-----CCGCTCC---
GTTATCT 59

Qy      2969 CATCCC--
CCAGTTTCTCAGATATGGTTTTTACTTCTGTGGATTTAATAAAAAAACTT 3026
      ||  |  |||  |  |  ||  |||  |||  |  |||  ||  |  |  |  |
Db      58 TATTACAGCCAAT--ATTAC--TATTGTT----
CCTTTGTAGGTAATCTCCAGTAGGC-- 9

Qy      3027 CACCAGT 3033
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Db      8 CAACAGT 2

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Search completed: March 9, 2010, 15:52:07  
Job time : 13.4292 secs

GenCore version 6.3  
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OM nucleic - nucleic search, using sw model

Run on: March 9, 2010, 15:51:16 ; Search time 1 Seconds  
(without alignments)  
1134.946 Million cell

updates/sec

Title: US-10-572-905-10  
Perfect score: 3243  
Sequence: 1 ctttttttttttttttttta.....ttcttaaaagcatgtgtaat 580

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 417 seqs, 79705 residues

Total number of hits satisfying chosen parameters: 834

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%

# Listing first 45 summaries

Database : 7335755.seq:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed,

and is derived by analysis of the total score distribution.

## SUMMARIES

Result			%				
No.		Score	Query Match	Length	DB	ID	Description
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c	1	1402.5	43.2	2198	1	US-10-478-914-17	Sequence 17,
Appl	2	1397	43.1	2198	1	US-10-478-914-17	Sequence 17,
c	3	1375	42.4	2120	1	US-10-478-914-64	Sequence 64,
Appl	4	1374	42.4	2437	1	US-10-478-914-61	Sequence 61,
c	5	1373.5	42.4	3589	1	US-10-478-914-21	Sequence 21,
Appl	6	1371	42.3	2495	1	US-10-478-914-20	Sequence 20,
c	7	1367	42.2	2495	1	US-10-478-914-20	Sequence 20,
Appl	8	1366.5	42.1	2022	1	US-10-478-914-60	Sequence 60,
c	9	1360	41.9	1813	1	US-10-478-914-63	Sequence 63,
Appl	10	1359.5	41.9	1946	1	US-10-478-914-62	Sequence 62,
c	11	1357	41.8	2120	1	US-10-478-914-64	Sequence 64,
Appl	12	1356	41.8	2336	1	US-10-478-914-57	Sequence 57,
c	13	1347	41.5	3210	1	US-10-478-914-4	Sequence 4,
Appli	14	1345.5	41.5	2022	1	US-10-478-914-60	Sequence 60,
c	15	1345	41.5	1813	1	US-10-478-914-63	Sequence 63,
Appl	16	1342.5	41.4	3210	1	US-10-478-914-4	Sequence 4,
Appli	17	1340.5	41.3	2437	1	US-10-478-914-61	Sequence 61,
c	18	1339	41.3	814	1	US-10-478-914-36	Sequence 36,
Appl	19	1338	41.3	811	1	US-10-478-914-37	Sequence 37,
c	20	1335.5	41.2	2083	1	US-10-478-914-3	Sequence 3,
Appli	21	1326	40.9	1946	1	US-10-478-914-62	Sequence 62,
c	22	1326	40.9	3589	1	US-10-478-914-21	Sequence 21,
Appl							

23	1324	40.8	2083	1	US-10-478-914-3	Sequence 3,
Appli						
24	1321.5	40.7	839	1	US-10-478-914-16	Sequence 16,
Appl						
25	1316.5	40.6	889	1	US-10-478-914-9	Sequence 9,
Appli						
26	1310	40.4	778	1	US-10-478-914-35	Sequence 35,
Appl						
27	1309	40.4	891	1	US-10-478-914-10	Sequence 10,
Appl						
28	1306	40.3	2336	1	US-10-478-914-57	Sequence 57,
Appl						
29	1305.5	40.3	909	1	US-10-478-914-67	Sequence 67,
Appl						
c 30	1304	40.2	802	1	US-10-478-914-24	Sequence 24,
Appl						
31	1298	40.0	938	1	US-10-478-914-69	Sequence 69,
Appl						
32	1296	40.0	781	1	US-10-478-914-55	Sequence 55,
Appl						
33	1295	39.9	779	1	US-10-478-914-53	Sequence 53,
Appl						
34	1294	39.9	814	1	US-10-478-914-36	Sequence 36,
Appl						
35	1293.5	39.9	868	1	US-10-478-914-19	Sequence 19,
Appl						
c 36	1292.5	39.9	909	1	US-10-478-914-67	Sequence 67,
Appl						
c 37	1289	39.7	938	1	US-10-478-914-69	Sequence 69,
Appl						
c 38	1286.5	39.7	839	1	US-10-478-914-16	Sequence 16,
Appl						
c 39	1285.5	39.6	811	1	US-10-478-914-37	Sequence 37,
Appl						
c 40	1281	39.5	909	1	US-10-478-914-66	Sequence 66,
Appl						
41	1278.5	39.4	855	1	US-10-478-914-11	Sequence 11,
Appl						
c 42	1277.5	39.4	749	1	US-10-478-914-29	Sequence 29,
Appl						
43	1277.5	39.4	772	1	US-10-478-914-52	Sequence 52,
Appl						
44	1275.5	39.3	726	1	US-10-478-914-43	Sequence 43,
Appl						
45	1275	39.3	860	1	US-10-478-914-12	Sequence 12,
Appl						

#### ALIGNMENTS

##### RESULT 1

US-10-478-914-17/c

; Sequence 17, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

Qy 161 AATTTGGGCTCAAC-AGGTGAAAA----GT----



AACAAATATCAAACGAATACT----- 205  
 | | | | | | | | | | | | | | | | | |  
 Db 1803  
 CACTCTGGTACAGCTTGGTGATGATGGGGTTGCAAACCTTTCTCCAGCTCTTTCTGTTGAT 1744  
  
 Qy 206 ----AAA-----CAGCATAACAAAAAGATT----TTCAGACTCTTGG-----  
 TCATAA- 245  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 1743  
 GTTCAAATTCTTCTTCTCAGCAGTCTGATTCTTATCAAGCCAGTTGATAATTTTCATTAC 1684  
  
 Qy 246 ---AGACCGTAATC-----GTTACATTG--  
 AATCAATGACTAAACATTTTGGATTA 292  
 | | | | | | | | | | | | | | | | | |  
 Db 1683 ACTTGTCAGAATCTTCTGTTTGTCTCATCGTTAATC-  
 TTGCCTTGAAGTTTCTCATCT 1625  
  
 Qy 293 CC--CAGCTACCTCCA--AGCAAAGTGAAGTGTCTAGTGGATCCT--GAAGTC-  
 CAT 344  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 1624 TCAACAGTTGCTTTTCATGTTGAAGGCATAGGAC--  
 TCAAGTGAATTCTTGATGACACCT 1567  
  
 Qy 345 AGTGCCTCT-----AG---CCGGGTCT-----  
 TTCAA 368  
 Db 1566  
 TGTCCCTCTGCTTCTCATCTTCAGCTTTGTACTTCTCAGCTTCTGGACCATACGTTCAA 1507  
  
 Qy 369 GTG-----TTGCACCACAGG-----  
 GTGATGATTGATGGTA----- 399  
 | | | | | | | | | | | | | | | | | |  
 Db 1506 -  
 TGTCTTCCTTGCTCAAACGGCCCTTGTCATTAGTGATAGTAATCTTGTTCTCTTTTCCC 1448  
  
 Qy 400 -----AAAACAGGGA-----  
 TCAACCCTTGATAGATCGGTGGTAAGTATGGA 440  
 | | | | | | | | | | | | | | | | | |  
 Db 1447 GTACTCTTGTCACAGCAGAGACATTGAGTATACCATTTGGC-  
 ATCAATGTCAAAGTGAC 1389  
  
 Qy 441 AACCTCT-AAGAACA-----GTGCAG--CGTATG--TG-  
 GTATTCAGACT----- 480  
 | | | | | | | | | | | | | | | | | |  
 Db 1388  
 TTCAATCTGAGGAACACCTCGGGGTGCAGGAGGTATGCCTGTGAGTTCAAACCTTGCCAAG 1329  
  
 Qy 481 --GGTT-----GCATAC-AGCATTCA-  
 AAACCAGT-----G 507  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 1328  
 CAGGTTGTTATCCTTTGTCATGGCAGCTCGCCTTCATAAACCTGAATAAGCACACCAGG 1269  
  
 Qy 508 CTG-----GAATAG-----CT-----TGCCCCAAAG---  
 TGGTAGAGTTAT- 540  
 | | | | | | | | | | | | | | | | | |

```

Db          1268
CTGGTTGTCAGAATAGGTAGTGAAGGTCTGTGTCTGCTTGGTAGGAATGGTGGTATTACG 1209

Qy          541 ----AAAAGGATATACATTGAC-----GTTTCTTAAAGCATGTGTAA 579
          |   |||| |   || ||||           ||||  || | || | || |
Db          1208 CTTGATGAGGACAGTCA-TGACTCCACCAGCAGTTTC--AATACCAAGGGAAA 1159

```

RESULT 2

```

US-10-478-914-17
; Sequence 17, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 17
; LENGTH: 2198
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-17

```

```

Query Match          43.1%; Score 1397; DB 1; Length 2198;
Best Local Similarity 41.7%; Pred. No. 2e-83;
Matches 379; Conservative 0; Mismatches 191; Indels 338;
Gaps 55;

```

```

Qy          1 CTTTTTTTTTTTTTTTTTTTAA--
AGTCTTTTAGTATATTTATTTGTATAAAGAGTAAACAA 58
          |   | |   ||   || ||||  || |   |   |   |||  || |   ||
||||
Db          464
CAATGTACTTAGAATTATTAATGAGCCAACTGCTGCTGCTATTGCTTACGGCTTAGACAA 523

```

```

Qy          59 A-----GTGCATATAGA---
GTGGCCACAGGTTTGACACAGAGA----- 94
          |   |   ||| | |||   |||  | ||  ||||| | | ||
Db          524 AAAGGTTGGAGCAGAAAGAAACGTG--CTCATCTTTGAC-
CTGGGAGGTGGCACTTTTGA 580

```

```

Qy          95 -----CC-----TTGGTGATGTAGGCTATGA--ACAAATTTAAA--TGG---
CAA 132
          ||           |||  |||| |   || |||  ||| | || |   |||
||
Db          581
TGTGTCAATCCTCACTATTGAGGATGGAATCTTTGAGGTCAAGTCTACAGCTGGAGACAC 640

```

```

Qy          133 CTTCAATTGCTG-----CCACTG-----AACCAATC-----
CTGAATTTGG 167
          |   | | | ||           | || |           ||||| |           |||| |||

```

```

Db 641
CCACTTGGGTGGAGAAGATTTTGCACACCGAATGGTCAACCATTTTATTGCTGAGTTTAA 700

Qy 168 GCTCAA-----CAGGTGAAAAGT---AACAA-----
TATCAAACGAATACTAAACAG 211
|
|
Db 701 GCGCAAGCATAAGAAGGACATCAGTGAGAACAAGAGAGCTGTAAGACGCCTCC-
GTACTG 759

Qy 212 CATAACAAAAAGATTTTCAGACTCTTGGT-----CATAAAGACC-----GTAATCG-
TT 259
|
|
Db 760
CTTGTGAACGTGCTAAGCGTACCCTCTCTTCCAGCACCCAGGCCAGTATTGAGATCGATT 819

Qy 260 CACATT-----GAATCAATGACTAAACATTTTTTGATTACCC-
AGCTACCTCCAAGCA-A 311
|
|
Db 820 CTCTCTATGAAGGAATCGACTTCTATACCTCC---ATTACCCGTGC--
CCGATTTGAAGA 874

Qy 312 ACTGAAAACGTGTCTAG-----TGGATCCTG-----AAGTCCATAG---
TGC 349
|
|
Db 875
ACTGAATGCTGACCTGTTCCGTGGCACCCCTGGACCCAGTAGAGAAAGCCCTTCGAGATGC 934

Qy 350 C--TCTAGCCGGGTC---TTTCAAGT-----GTTG-----
CACCA 379
|
|
Db 935
CAAACCTAGACAAGTCAAGATTCATGATATTGTCCTGGTTGGTGGTTCTACTCGTATCCC 994

Qy 380 CAGGGT---GATGATT-----GATGGTAAA-AACAG-----
GGATCAA 413
|
|
Db 995
CAAGATTCAGAAGCTTCTCCAAGACTTCTTCAATGGAAAAGAACTGAATAAGAGCATCAA 1054

Qy 414 CCCT-----TGTAGAT-----CGGTGGT-----
AAGTATGGAAACCC 445
|
|
Db 1055
CCCTGATGAAGCTGTTGCTTATGGTGCAGCTGTCCAGGCAGCCATCTTGTCTGGAGACAA 1114

Qy 446 -TCTAAGAA---CAG---TGACAGC---GTATG-----
TGGTATTCA 476
|
|
Db 1115
GTCTGAGAATGTTCAAGATTTGCTGCTCTTGGATGTCACTCCTCTTTCCCTTGGTATTGA 1174

Qy 477 GACTGGT-----TGCATA---
CAGCATTCAAAAC----- 502

```

```

          |||| |
Db      1175
AACTGCTGGTGGAGTCATGACTGTCCTCATCAAGCGTAATACCACCATTCTCTACCAAGCA 1234

Qy      503 ----CAGTGCTGGAATAGCT----TGCC--CCAAAGTGGT-----
AGAGTTAT-- 540
          ||| || | || || || | ||| ||| || |||

Db      1235
GACACAGACCTTCACTACCTATTCTGACAACCAGCCTGGTGTGCTTATTTCAGGTTTATGA 1294

Qy      541 -----AAAAGGATATACA-----TTGAC--GTTT---
CTTAAAAGCA 572
          ||||| ||| ||| | ||| || | |

|||
Db      1295 AGGCGAGCGTGCCATGACAAAGGATA-
ACAACCTGCTTGGCAAGTTTGAATCACAGGCA 1353

Qy      573 TGTGTAAT 580
          | | |
Db      1354 TACCTCCT 1361

```

# RESULT 3

```

US-10-478-914-64/c
; Sequence 64, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 64
; LENGTH: 2120
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-64

```

```

Query Match          42.4%; Score 1375; DB 1; Length 2120;
Best Local Similarity 40.3%; Pred. No. 6.5e-82;
Matches 362; Conservative 0; Mismatches 199; Indels 338;
Gaps 48;

```

```

Qy      1
CTTTTTTTTTTTTTTTTTTAAAGTCTTTAGTATATTTATTTGTATAAAGAGTAAACAAAG 60
          | ||||| |||| | || ||||| ||| | ||
|
Db      2083 CCTTTTTTTTTTTTTTTTAAAGAATGAGTTACATTTATTGATAT---
GGTTTGTGATA- 2028

Qy      61 TGCATATAGAGTGGCCACAGGTTTGACACA-----GAGACCTT-----
GGTGATGTAGG 109

```

|  
 Db 2027 TGCTTTATAAATGGTCACC-  
 CTTTGAAACATGTATTATTACTATTTGGGGGAGAGGGGA 1969  
 Qy 110 CTAT-----GAACAAATTTAAATGG-----  
 CAACT 134  
 || | | ||| | || |||  
 Db 1968  
 CTGTTTCATTTTACAGGGGACAAGCAAGACAGGCTCAAGGAGGGAAAGGACAGGCTCAAAG 1909  
 Qy 135 TCATTGC----TGCCACTGAA-----CCAATC---  
 CTGAATTTGGGCTCAAC---- 174  
 |||| | || ||| | || || || ||| |||  
 Db 1908  
 TCATCACAGTGTGGGGCTGGAATGCAGTTGCCCTTCCTTCTTTCTTTTGCACATCTTCC 1849  
 Qy 175 -----  
 AAGTGAAAAGTAACAATATCAAACGAATACTAAACAGCATAACAAAAAGATTT 227  
 |||| | || | | | | |||| |  
 |  
 Db 1848 GTCTCTAGGGTGAGGAGGGGTGCAGGCACAGGCACCCAAGACAGC-----  
 TGCGGT 1798  
 Qy 228 TCAGACTC-----TTGGTCATAAAGAC-----  
 CGTAATCGTTCAC----A 263  
 ||| | | |||| | || | ||| | |  
 |  
 Db 1797  
 CCAGCCCCGCCCCACCTGTGGTCTCAGTGACGCCCCAGAGGCCCATCTTCCCCACATA 1738  
 Qy 264 TTGA-----ATCAATGACTAAACATTTTGTATTA--CCCAG---  
 CTACCT 303  
 ||| |||| | | | | | ||| ||| |||| |  
 ||||  
 Db 1737  
 ATGAGGCTGCTCCATCCTCCTCAAAGCCCAGACCTATTTTATAAGCCCCAGACCCACCT 1678  
 Qy 304 ----CCA-AGCAAAGTGAAGTGT-CTAGTGGATCCTGAAGTCCATAG-----  
 TGCC 350  
 ||| || || ||| | || | | | | ||| |||  
 ||||  
 Db 1677 TCACCCAGGGCCCCAAGAGAACAGAGCTGGAGACACTTCTACTCC-  
 TAGCACTGGATGCC 1619  
 Qy 351 TCTAGCCGGGTCTTTCAAG-TGTTG-----  
 CACCAC----- 380  
 || || || | ||| ||| | |||| |  
 Db 1618 -  
 CTCTCCCCTCCTGTGAAGCTGTAGGTGGGGGGTGGAGGACACCCCTTTAAGGCAGGCTC 1560  
 Qy 381 --AGGGTGATGA-----TTGATG---GTAAAAACAGGGAT-----CA-  
 ACC 415  
 ||| |||| | || | |||| || |||| ||  
 |||  
 Db 1559  
 GGGGGGCTATGAACTCCAAGACTCCTGGAAGCCAGTAAGAAGTGGAAGGTAGGCACACC 1500  
 Qy 416 CTTGTAGAT-----CGGTGGTAAG-----  
 TATGGAAACC---- 444

```

          ||   ||           | | | |||           ||||| ||
Db          1499
ATTTGGGATTTTTATTTTCACTGAGCTAAGAGAGGAGATTCCAGCTATGGAATCCAGAG 1440

Qy          445 -----CTCTAAGAACAGTGCAGCGTATG-----TGGTATTCAGA-----
CTGGT 483
          || | ||||| |||   ||           |||   ||||
||||
Db          1439 AGCGTTCTACAGGAACAGAACAGAAATTGGCTGGGCCCTGG-
GCCCAGAGGAGGCCTGGA 1381

Qy          484 --TGCATACAGCATTCAAAACCAG-----TG-----CTG-----
GAATAG 516
          || ||| |   ||||   ||||           ||   |||           | ||
|
Db          1380 GCCGCTTACTG--
TTCAGTGCCAGCTTCATCCTTGGCACTCTGCCTCTCACACAGCATCG 1323

Qy          517 CTT--GC-----CCCAAAGTGGTAG-----
AGTT----- 538
          ||   ||           |||| ||||| ||           || |
Db          1322
CTCCGGCTCCCAGAGCCCACAGTGGCAGCCGCTGGAGGCTGTGGCAGCAGCTGCTGCCCT 1263

Qy          539 ----ATAAAAGGATAT-----ACATTGACGTTTCT-----
TAAAAGCATGTGTAAT 580
          |   | |||| |           |   |||| |||           || ||| |   | |
|
Db          1262
GCCCAAGGAGGGATGTGGGCTTGGCTCTGACAGTTCAAGCCAGAAAGAGCCTTAGAAGT 1204

```

#### RESULT 4

```

US-10-478-914-61/c
; Sequence 61, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 61
; LENGTH: 2437
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-61

```

```

Query Match          42.4%; Score 1374; DB 1; Length 2437;
Best Local Similarity 40.6%; Pred. No. 1.6e-81;
Matches 354; Conservative 0; Mismatches 216; Indels 302;
Gaps 44;

```

Qy 1 CTTTTTTTTTTTTTTTTTAA-AGTCT-----TTAGTA----  
TATTTATTTG 42  
|  
Db 2415  
CTTTTTTTTTTTTTTTTTTAAGAATCACAGCAATCCAAGCAAAGTACCTCACTGAGTAGG 2356

Qy 43 TATAAAGA---GTAAACAAAGT-----GCATATAGAGT---  
GGCCACAGGTT 83  
|  
Db 2355  
TATCAAGACCCTTCAGGCAGAATTCCATCATTCTCGCAATTAGTGACAGGGACGCTGG-T 2297

Qy 84 TGACACAGAGACCTTG--GTGATG-----  
TAGGCTATGAACAAATTTAAATG 128  
|  
Db 2296 TGTGGAGGAGTATTTGGAGTGGTGGCAGAAAATTGCATCGGC-  
ATTTCCAGCTTGAGTAG 2238

Qy 129 G---CAACTTCATTGCTGC--CACTGAA-CCAA-  
TCCTGAATTTGGGCTCAACAGGTGAA 181  
|  
Db 2237 GTCTTATCTTCTTAGCGGATGCTCAGAAGCCAAGGTCTGGATGCAGTCG-  
GTCAGTTGCA 2179

Qy 182 AAGTAAC-----AATATCAAACGAATAC-----  
TAAACAGCATAACAAAAAG 223  
|  
Db 2178 AA-  
TAACAGCTCAGGAATGTTAAGTGGCTTCAGGAGTCGTGTGGACAGCACGATTACCTG 2120

Qy 224 ATTTTCAGACT----CTTGGTCATAAAGACCGTAATCG--TTCACAT-  
TGAATCAATGAC 276  
|  
Db 2119  
GGTTCTTGCTTCAACGATGCCACAAGATCTTTGACCATTTTCACTTCAGAGACTGTGAC 2060

Qy 277 TAAACATTTT-----TGATTAC-----CCAGCT-  
ACCTC 304  
|  
Db 2059  
CCCACCTACCACAAAGAGGATCAGGAGGGGGTAGTCACTAGGATGAGGCCGGCTCACCTT 2000

Qy 305 CAAG--CAAAGTGAAGTGTCT-----  
AGTGGATCCTGAAGTCCATAGTGC--- 349  
|  
Db 1999  
CATGAACATGCTAAATCCAGTTTTAAGGAGATCAGTGAGGCCTGAAGACATGTGTTCAAT 1940

Qy 350 -----CTCTAGC----CGGG-----TCTTTC-----  
AAGTGTTGCACCACAGG 383  
|  
|

```

Db          1939
ATCAACGGAATCTGGCCTCTCGGGATGAAATATTTCTCCACAACCTTGCTTCAACAATGG 1880

Qy          384 GT-----GATGATTGATGG-----
TAAAAAC----- 404
          |      |||  || |||
Db          1879
CTTATAAGATGCCTGGTGGGTATGATTTCCAGGAACATATACAGACTTAAACTGTTTCAG 1820

Qy          405 -----AGGGATCAACC-----
CTTGT 420
          || | ||| ||      ||

|
Db          1819
GAGACTCCGAGCTCCAGCAATATCCCGAAGTGAAGTAAAGAGTTCATCCACGGCAATTTT 1760

Qy          421 AGATCGGTGGTAAGTATG-----GAAACCCTCTAAGAAC---
AGTGCAGCGTATG 467
          |||  |||  | ||  |      ||  |||  |  |  |      |||||  |

|
Db          1759
GGATTTGTGAAATGTCAGATTAATTGAAGAGTCCCAGTCCGTAATTTTTTGCAGCAAAGG 1700

Qy          468 TGGTATTCAGACTGGTTGCATACAGCA-
TTCAAAACCAGTGCTGGAATAGCT----- 518
          ||  | ||  | | || | ||||  |  |  | ||| ||||  |  ||

Db          1699 TGACAATC---
CAGATTCTCTACAGAAGACCTGAGCCAATGCTTTCTTGACTTTTTTCTTC 1643

Qy          519 TGCCCCAAAGTGGT-----AGAGTT-----ATAAAAGGATATACAT---
TGA- 557
          |||  ||  |  |||      |||  |      |  | || |||  | ||

|||
Db          1642
TGCTTCACACAGGTCTTTGTCTACCGTGAGCTCTCCAGTGACAGAATAAATATATATGAG 1583

Qy          558 -----CGTTTCTTAAAGCATGTGTAAT 580
          |  |||  |  |  ||  ||||  |

Db          1582 AAGGATCAGCAGTTCCTCAGGGC---TGTAGT 1554

```

RESULT 5

```

US-10-478-914-21/c
; Sequence 21, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 21

```



```
;   LENGTH: 3589
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-478-914-21
```

Qy 1 CTTTTTTTTTTTTTTTTAAAGTCTTTAGTATATTTATTTGTATAAAG-----  
AG 51

Db 3567 CTTTTTTTTTTTTTTTTTTT-----  
TTTTTTTTTTTTTTGAAAGAATCCAGCAGATATTTAT 3513

Db 3512  
TAAGCAAGATGAAAGTCAAATTACAAACACAGGTCAACTTTTAAACTCAGCACTCTGTTG 3453

| | |    |    | |

| | | |         | | | | |                  | |      | |                  |

||  
Db 3452  
GAGTGGAGGTGCACGGTCCTTCATCATAGGCAGCCTATGCGAGATGCATCTTAGGAAGGG 3393

| | | |     | | | | |                | |     | |     | |     | |     | |

|  
 Db            3392 AGCTT--  
 TCGTGCTCAGAAATCAAAGCTCCATCGGAGGTGTCCTACTGGAGGCATCAGA 3335

| | |                      | |                      | | |                      |                      | | |                      | | |                      | |                      | |                      | | | | | |

||||  
Db 3334  
CAACAAGCTAAATGACGTTAGGGCTACACAACACAAAGGGGAAAGTTGACAACAATTCAG 3275

||||  
Db 3274 GGGCTTTGAGTAGTCAAGACAATTAGCTTAGTACTTCAGGTCAATAAATGCTACA-  
ATTT 3216

\_\_\_\_\_

Db 3215 ATGGGCAATTAGCTGTAAAATGGCCTAC-  
AGCTGAAACACTATTCTTGTCTTATTTACAG 3157

| |    | |    | |                 |    |                 | | | |    |    |                 | | | |    |

```

|||
Db          3156
ATTTTCATGGAGATTAAAGATAATCTAAACAGATTAAGGCCTTAATCTTTAATCCAGGTGA 3097

Qy          372 -----TTGCA-----
CCACAGGGTGATGATTGATGGTAA 400
|||
||
Db          3096
GTAATTTTGTGGTTGTAGTAAAAAGCATAAGAAATAATTCTCAGCATATTATGTAAAAGAAA 3037

Qy          401 AAACAGGGGATCAACCCTTG-TAGAT----CGGTGGTAAGTA----
TGGAACCCCTCTAAG 451
|| ||| || || |||| | | | | |||| ||| | || | | | || |
Db          3036 AAGCAGTGA--
AAACCTTGTTTGGTCTTCCAGTGGCAAGGATAGTTGAACAACCTTCAAGA 2979

Qy          452 AACAGTGCAGCGTATGT-----
GGTATTCAGACTGGTTGCATACAGCATTCAA 499
| | | | || ||| |||| ||| | | | |
|||
Db          2978
AGCTGAGAGAAGTTTGTTCCTCAATTTACAAGTATTTTGACATATAGATAAAACAAAAGCAA 2919

Qy          500 AACCAGT---
GCTGGAATAGCTTGCCCCAAAGTGGTAGAGTTATAAAAGGATATACATTG 556
|||||| | || || | || | | | | ||||
Db          2918
AACCAGTTAAACCTTAAAGATCATCTGAATAAGATCCTGACAATTATAATTTTACATCC 2859

Qy          557 ACGTTTCTTAAAGCATGTGTAA 579
| || || |||| ||| |
Db          2858 ATGTGAATTTCAAGCAATTGTTA 2836

```

```

RESULT 6
US-10-478-914-20
; Sequence 20, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 20
; LENGTH: 2495
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-20

```

Query Match 42.3%; Score 1371; DB 1; Length 2495;

Best Local Similarity 39.1%; Pred. No. 3e-81;  
Matches 381; Conservative 0; Mismatches 190; Indels 404;  
Gaps 54;

Qy 1 CTTTTT-----TTTTTTTTTTTTTAAAGTCTTTAGTATAT-----  
TT 37

| | | | | | | | | | | | | | | |

|  
Db 220  
CATCTTTGGGCAGAACTGGTGTTTTTGTATGACAAGTATGAAGAATATGATAATGCCATA 279

Qy 38 ATTTGTATAAAGAGTAAACAAA---GTGCAT--ATAGAGTGGC----CACAGGT----  
TT 84

| | | | | | | | | | | | | | | |

| |  
Db 280  
ATTACCATGATGAATCATCCAACCTGATGCCTGGAAAGAAGGGCAATTCAAAGATATCATT 339

Qy 85 GACACAGAGACCT---TGGTGATGTA-----GGCTAT---  
GAACAAATTTAAATGGCAA 132

| | | | | | | | | | | | | | | |

|  
Db 340  
ACCAAGGTTGCCAATGTGGAACCTATACTACAGAGCAATACAGTTCTACTTAGAATTCAAG 399

Qy 133 CTTC-----ATTGCTG-----CCACTG-----AAC-----  
CA 154

| | | | | | | | | | | | | | | |

| |  
Db 400  
CCTCTGTTGTTAAATGATTTGCTGATGGTGCTGTCTCCACGGTTGGATCACACTCGTGCA 459

Qy 155 ATCCTGAATTTGGGC-----TCAACAGGTGAAA-----  
AGT- 185

| | | | | | | | | | | | | | | |

| | |  
Db 460  
GTCAATTATTTTTCAGCAAGGTTAAACAGCTACCACTGGTGAAACCGTATTTGCGTTTCAGTT 519

Qy 186 ---AACAATATCA-----AACGAAT-ACTAAACAG-----CATAAC--  
AAAAA 222

| | | | | | | | | | | | | | | |

| |  
Db 520  
CAGAACCATAACAACAATCTGTGAATGAATCATTGAACAATCTTTTTATTACAGAAGAA 579

Qy 223 GATTTTCAGACTCT-TGGTCATAAAGA-----  
CCGTAATCGTTTACATTGAATCAATG 274

| | | | | | | | | | | | | | | |

|  
Db 580  
GATTATCAGGCTCTGCGAACATCAATAGATGCTTATGACAACCTTTGACAATATCTCGCTT 639

Qy 275 ACTAAACATTT-----TTGATTACC-----CAGC-  
TACCTC--C 305

| | | | | | | | | | | | | | | |

|  
Db 640  
GCTCAGCGTTTGGAAAAACATGAACTCATTGAGTTCAGGAGAATTGCTGCTTATCTCTTC 699

Qy 306 AA--GCAA-----ACTGAAAA-----  
CTGT----- 323  
|| ||| ||| ||| |||  
Db 700  
AAAGGCAACAATCGCTGGAAACAGAGTGTAGAGCTGTGCAAGAAAGACAGCCTTTACAAG 759

Qy 324 -----CTAGTGGATC-----CTGAAG---TCC-  
ATAG 346  
|| || ||| ||||| |||  
||  
Db 760  
GATGCAATGCAGTATGCTTCTGAATCTAAAGATACTGAATTGGCTGAAGAACTCCTGCAG 819

Qy 347 TGCCTCTAGCCGG-----GTCT-  
TTCAAGTGTTC--- 375  
|| | | || || |||| || | |||| |  
Db 820  
TGGTTTTTGCAGGAAGAAAAAGAGAGTGCTTTGGAGCTTGTCTGTTTACCTGTTACGAT 879

Qy 376 -----ACCA-----CAGGGTGATGATTGATGG--  
TAAAAACAGGGA----- 409  
||| | | || || || || || || || ||  
Db 880  
CTTTTAAGGCCAGATGTCGTCCTAGAACTGCATGGAGGCACAATATCATGGATTTTGCC 939

Qy 410 -----TCAACC----CTTGTAG-----  
ATCGGTGGTAAGTATGGAAAC- 443  
||| || | || || | |||| | | ||  
|  
Db 940  
ATGCCCTATTTTCATCCAGGTCATGAAGGAGTACTTGACAAAGGTGGATAAATTAGATGCT 999

Qy 444 -----CCTCTAAGA-----ACAGTG---CAGC-----  
GTATGTGGT 471  
| || ||| |||| | || | || |  
|||  
Db 1000  
TCAGAATCACTGAGAAAAGAAGAACAAGCTACAGAGACACAACCCATTGTTTATGG- 1058

Qy 472 ATTCAAGAC----  
TGGTTGCATACAGCATTCAAACAGTGCTGGAATAGCTTGCCCCA-- 525  
||| | | ||| |||| | |||| || | || ||||  
Db 1059 --TCAGCCCCAGTTGATGCTGACAGCA--GGACCCAGTGTTGCCGTCCCT--  
CCCCAGG 1111

Qy 526 ----AAGTGG-TAGAGTTATA-----  
AAAGGATATACATTGACGTTTCTT---- 565  
||| || ||||| | ||| | || | || |||  
Db 1112 CACCTTTTGGTTATGGTTATACCGCACCACCGTATGGACAGCCACAGCC-  
TGGCTTTGGG 1170

Qy 566 AAAAGCATGTGTAAT 580  
| ||||| || ||  
Db 1171 TACAGCATGTGAGAT 1185

RESULT 7  
US-10-478-914-20/c  
; Sequence 20, Application US/10478914  
; Patent No. 7335755



```

|||
Db      2160 AACTACAAAACTACTGTTCTTTTCGTTTGAGTGGTATTTAATTAAACTTCA-
ATTCTA 2102

Qy      238 GGT CAT----AAAGACC-GTAAT---CGTTCACATTGAAT-----
CAATGACT 277
      || ||   | || || |||||   || |   |||| |           ||

||
Db      2101
TGTTATTTCCACAGTCCAGTAATTTATTTTAAATTTGAGTAATTTCAAATTCCACAAACA 2042

Qy      278 AAAC-----ATTTTTGATT-----ACCCAG----
CT-- 299
      ||||           |||| ||           || |||   ||

Db      2041
AAACTGAAGAACAGCAATATTTTGTGTTGAATTTCTCTCTTCTGTACACTCAGTGATCTAA 1982

Qy      300 ---ACCTC-----CAAGCAAAGTGAAGT-----
GTCTAGT----- 328
      ||| |   | | || ||   ||| ||           |   ||||

Db      1981
AACACCACAATATCCAACATACACAAACCTCAGGGAAGGGTTAGTAAACACACACAAGAT 1922

Qy      329 --GGATCCTGAAGTCCATAGTGCCT--
CTAGCCGGGTCTTTCAAGTGTGCAC----- 377
      | ||| || | | | | ||| | |   ||||   ||           ||||

Db      1921
TGGAATCATGGTGTCTCTTTGCTCCTGAATGGAATGGTCCACAGAAAAAGCACAGGATAC 1862

Qy      378 --CACAGGGTGATGATTGATGGTAAAAA--CAGGGATCAACCCTTG-TAG-----
ATCG 426
      ||||   | | |   || || | |   || || ||| | |   |||           |

Db      1861
AGCACAACATAAGGGCACCTGTTACATATGAAGTGAGCAAAACATACTAGCATTTTCTAT 1802

Qy      427 GTGGTAAGTATGGAAACCCTCTAAGAACAGTG-----
CAGCGTATGTGGTATTTCAGA 478
      || | |   ||||| | | |   || |           || || | |   |

||||
Db      1801
ATGCATAATGGGGAAACCTGCATAGGTTAGAGGGCCTTTTACGCTCATTTAAAAATCAGG 1742

Qy      479 CTGGTTGCATACAGCATT-----CA----AAACCA-----
GTG 507
      |   |||| | | ||||           ||   || |||

|||
Db      1741
CAAGTTGTCTGTAAACATTTTCAATAATCTGGGAAGCACTGCAATCCAGTGTACGATGTG 1682

Qy      508 CTGGAATAG-----CTT-----GCCC---CAAAGTGGTAGAGTTATA----
AAAGGATA 549
      || || |||   |||   || |   ||   | | |   || |||   | |

|
Db      1681 CT-
GATTAGTGTGTCTTTGTTGGCACTGACAGTCTTGCATGGTCATATGCCAGTGTTTT 1623

Qy      550 TACATTGACGTTTCTT----AAAAGCATGTGTAA 579
      | | || | |||||   ||| || | |||

Db      1622 TGCTTTAGCTTTTCTTTGAATAAAACAGATTTAA 1589

```

US-10-478-914-60

Query Match 42.1%; Score 1366.5; DB 1; Length 2022;  
Best Local Similarity 37.9%; Pred. No. 2.1e-81;  
Matches 369; Conservative 0; Mismatches 191; Indels 413;  
Gaps 45;

```

Qy          26 -----TT-----TAGTATATTTATTT-----
GTATAAAGAGTAAACAAAGT 61
                ||          ||||| ||||  ||          || ||||| |  |  |
|
Db          803
GATAATTTGCCCAGTAGTACATTTTATTGCTGCAAGCAAAGTTTAAAGTGATATAATTGA 862

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```

Qy          91 --GAGACCTTGGTG-----
ATGTAGGCTATGAACAAATTTAAATGGCAACTTC----- 136
          | | | | | | | | | | | | | | | | | | | | | |
Db          922 GTGTGACGCAGGTGGAAGCTATAAAGGCCATGTGGATATTT---
TGGCACCTACTGTTC 978

```

Qy           137 ----ATTGCTGCCACTGAAC-----  
CAATCCTGAATTTGGGCT----- 170  
               | | | | | | | | | |                 | | | | | | | | | |

Db           979  
AGAGTTGGCTGCCCTTGAAAAGGAGGC GCAGACATCTTTCCTGCATCTTGGCTACCTTCC 1038

```

Qy          171  ----CAACAG-----
GTGAAAAGTA 186

      | | | |

|
Db          1039
TAACCAGCTGTTCAGAACCTTCTGATTTTTACATTTACTGAATAAGATTTGAGTAATGAA 1098

Qy          187  A-----CAATATCA----
AACGAATACTAAACAGCA-----T 214

      |           | | | |      | | | | | | | |

|
Db          1099
AGTCTGTAGTCTTAAACCTCTAAACAGTTGTACTGCTTCCAAGCAGCAGTATTTATAGT 1158

Qy          215  AACAAAAAGATTTT----CAGACTCTTG---
GTCATAAAGACCGTAATCGT----- 258

      | | | | | | | | | | | | | | | | | | | |

Db          1159  AAC-GTAAGCTATTAATGCTAACTCTTGCATGTCA-
AGAAACATTAGTCTTAGGAATTCT 1216

Qy          259  -----TCACATTGAA-----
TCAATGACTAAACATTTTGA----- 289

      | | | | | | | | | | | | | | | |

Db          1217
TCAAAAAATGGCATCCCAATGAAAATAAATTTGATGACTATATTTTCATGAAGGTTTGTG 1276

Qy          290  -----TTACCCAGCTACCTCCAAGCAA-----
ACTGAAACTGTCTAGTG 329

      | | | | | | | | | | | | | | | |

|
Db          1277
TCTTATTTTAAAGTTATATTGATATATTTTTTCTATTTCTTTTTTAAGAACAGTATG--G 1334

Qy          330  GATCCTGAAGTCCA-----TAGTGCCTCTAGCCG-
GGTCTTTCAAGTGTTGCACC 378

      | | | | | | | | | | | | | | | | | |

| | |
Db          1335  GCTTATGAAGTAGAATTTATGGGTATGTGAATCTGGCAGAGGACTTAC----
GTGGAACC 1390

Qy          379  ACAGGG-----
TGA 387

      | | | |

| | |
Db          1391
ACTCGGGAATATTCTAAAAGTAGGTTTTTCAGATGGCTAAGGTTGTCTATGTGTATATTGA 1450

Qy          388  TGATTGA-----TGGTAAAAACAGGGA---TC----AACCC----
TTGTAGATCGG-- 427

      | | | | | | | | | | | | | | | | | |

Db          1451
AGCTAGAGGAGAGTTGGAACATGAAGGGAAATTCGATGATCCCAATGTAGAAGAACTGCT 1510

Qy          428  TGGTAAGTATGGAAAACC-----CTCTAAG-----
AACAGTGCAGCGTATGTGGTA 472

      | | | | | | | | | | | | | | | | | |

Db          1511
TGGTTAGTTTGGGAAGCATGGAAGTTTTGAGGGAGTCAGTAAAGGTTCTGTATCTAAGGAC 1570

```



Qy 473 TTCAGACTGGT-----TGC-----ATACAGC----  
ATTCAAAACCAGTGCT---- 509  
| | | | | | | | | | | | | | | | | |  
Db 1571  
TGATGACTGATGTGATGGTGCCAGTGAAGATGTATCTTCTTTTTATGACCCTTGCTTTCC 1630

Qy 510 -GGAATAGCTTGCCCC--  
AAAGTGGTAGAGTTATAAAAGGATATACATTGACGTTTCTTA 566  
| | | | | | | | | | | | | | | | | |  
| | | | |  
Db 1631 AGATGATGCATACCCATTAAAGT-----AGAACTAATCTGCTGTCCCT--  
ACAGGTCTTA 1683

Qy 567 AAAGCATGTGTAA 579  
| | | | | | | | | | | | | | | | | |  
Db 1684 AAATCAAACCTAA 1696

RESULT 9  
US-10-478-914-63/c  
; Sequence 63, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 63  
; LENGTH: 1813  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-63

Query Match 41.9%; Score 1360; DB 1; Length 1813;  
Best Local Similarity 36.6%; Pred. No. 3.4e-81;  
Matches 389; Conservative 0; Mismatches 187; Indels 486;  
Gaps 53;

Qy 1  
CTTTTTTTTTTTTTTTTTT----- 18  
| | | | | | | | | | | | | | | | | |  
Db 1791  
CTTTTTTTTTTTTTTTTTTGGGGAGAACACTTTGCTTTGGCTATAAAAAAGGAGTTTCTGA 1732

Qy 19 -----TAAAGTCT-----TTAGT-----ATATT-  
TATT 40  
| | | | | | | | | | | | | | | | | |  
| |  
Db 1731  
AAATATACAATATGAGTACTATGGAGACTACTAGGATTAGTGCTGAATCCTTATTATTTT 1672

Qy 41 TGTATAAG-----AGTA----  
AACAAAGTG----- 62  
||| || || ||| |||| ||||

Db 1671  
TGTCTACAGTAAGGTGGGTAAGGTAATCCAACACAGTGGCAGCCAGCCAGCCATACAGTT 1612

Qy 63 -----  
CATATAGAGTGGC----- 75  
|||| | | || |

Db 1611  
GTTAATTCTTATCACATACAAATGTCTTTAGCATGGAATAAACATTATACATTTCTAA 1552

Qy 76 -CACAGG-----TTTG-----  
ACACAGAGACCTTGGTGATGTAGGC-- 110  
| |||| |||| ||||| | || || ||

Db 1551  
GCTCAGGCTGAATCCTTTGCAAATCTTTTAAAGCACAGAAAAATTAAGTATTTAAATG 1492

Qy 111 TATGAACAAATT-----TAAATGGCA-ACTTCA--  
TTG 140  
| || ||||| | |||| || || || ||

||  
Db 1491  
TTTGGACAAATATTTTCTCAAATAAGAAAATCTGAACTCTGAATGTCATACTCCAATTTA 1432

Qy 141 CTGCC-----ACTGAACCAAT---CCTG----  
AATTTGGGCT----- 170  
|| || ||| || || | ||| |||

Db 1431  
CTACCCACAACACTAACTAAAATAATATACCAGCAGCATTTTTAGCTATATGATCAGAAT 1372

Qy 171 -----CA--ACAGGTGAAAAGTAACAATA-----  
TCAAACGAATACT----- 205  
|| ||| || || | ||| ||| || || | ||

Db 1371  
ACTTGCATTACACTTGTAATGGAACCATACACATATTCTCTATCTCTCTCTGCCATAGAT 1312

Qy 206 --AAACAGCATAACAAAAA---GATTTTCAG-----ACTC--  
TTGGTC 241  
| | ||||| ||| | ||| | |||| |

||  
Db 1311  
AAATGCTGCATAACTTAAATACTGCTCTTCTGTGCTATTAATACAGCAACTCAAATATTC 1252

Qy 242 ATAAAGACCGTAATC-----GTTACATT-----  
GAATCAATG 274  
| ||| | |||| | ||| | | ||||

|  
Db 1251  
AAAAACATAGTAAGCTGCAACCTGTGAATCTAGTATTTTCCCTCTTTTACAACCTCAAAG 1192

Qy 275 ACTAAACAT---TTTTGATTACC---CAGC-----  
TACCTCCAAGCAAAC 313  
| ||| | || |||| |||| | || |||| ||

|  
Db 1191 GCATCCCATAGATGATGGTTACAAATCAGCACAGGATTAAAATAGTGCCCCCAA-  
CACAT 1133

Qy 314 TGAAAACG--TCTAGTGGAT---CCTGAAGT--CCATAGTGCCT---  
CTAGCCGGGTCT 363

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      | | | | | | | | | | | | | | | | | | | | | |
| |
Db      1132 TAAAAGCTGACTCTGCTGGGTGTGGCTTAAGTAAACATCTCGTCTCAACTGGACAG--
CT 1075

Qy      364 TTCAAGTGTGCA-CCACAGG-----GTGA-----
TGATT---- 392
      | | | | | | | | | | | | | | | | | | | | | |
Db      1074
ACCCAGTAACACAGCCACAGAAACCGAAAATATGTGAGTACATAAGTAAAGTGCTTCTTT 1015

Qy      393 -----GATGGTAAA-----AACAGGGATCAACC---
CTTGATAGATCGGTGGTAAGT 435
      | | | | | | | | | | | | | | | | | | | | | |
|
Db      1014
TGGAGGGGGTGGGAAACTAAGCCTCCATGTTTCATCTATGCTTGATGCTCAATTGTTTCT 955

Qy      436 ATGGAAACCCTCTAAGA--ACAGTGC--AGCGTATGTG-----
GTATTCA----- 476
      | | | | | | | | | | | | | | | | | | | | | |
Db      954
ATACTGTACTTCTGAAATGACAGTGCCTTGAGTCAATGCTGAACATTGTTCAAGAAACCA 895

Qy      477 --GACTGG-----TTG-CATACAGCAT-----
TCAAAA 501
      | | | | | | | | | | | | | | | | | | | | | |
|
Db      894
AGGACAGAGAAATGTTACTTGTCTACTTCTCTCCTTTATTTTATGCTCCCTGTCTACA 835

Qy      502 CCAGTGCTG-----GAATAGCTTGCCCCAAAGTGGTAG--
AGTTATAAAAGG-- 546
      | | | | | | | | | | | | | | | | | | | | | |
Db      834
ACATGGCCGTTCTTACAAACATTTTGCTTTTATAAAAGAGGTAATCATTTAAATCAAGAC 775

Qy      547 -ATATACATTG-----ACGTTTCTTAAAAG-CATGTGTAA 579
      | | | | | | | | | | | | | | | | | | | | | |
Db      774 TATGTGCAATGCGAACTCACACTGCATTACAGTCATCAATAA 733

```

RESULT 10

US-10-478-914-62

; Sequence 62, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-255226

; PRIOR FILING DATE: 2001-08-24

; NUMBER OF SEQ ID NOS: 417

; SOFTWARE: PatentIn version 3.2



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      |||| || ||      |||| |      |||| | ||| |||
Db          836
TTCTCTTGATTTTCCTCTCTGCAGCTGCTTTGAGGTGGGTTTTCTCCAGATGCACACTTT 895

Qy          317 AACTG-----TCTAGTGGA-----
TCCTGAAG----- 339
      |||      ||| || ||      || | |||

Db          896
CCCCTGCTTTGCGTCCTTATTCTGGTAGAAGCACAACTCTAAAGCTCATTAAGGGAATA 955

Qy          340 TCCAT--AGTGC----CTCTAGC----CGGGTCT-TTCAAGTGTTCACCA----
CAGGG 384
      || ||      ||||      | ||||      | ||      ||      | |||| |      ||
|
Db          956
TCAATTCTGTGCATGGCGCTAGCTCAGCAGATCACCACACAGGCAGCACTATTAGCAAGT 1015

Qy          385 TGATGATTG----ATGGTAAAAACAGGGATC-----AACCCCTGTAGATC--
GGT--- 428
      | || ||      |||| |      || | |||      | ||| ||||| | ||

Db          1016
CGGTGCTTAACACATGGCACTTCCATGAATCGATATGGAGCCCGTGTAGAACAAGGCATG 1075

Qy          429 GGTAAGTATGGAAACCCTCTAAG---AACAG-TGC-----AGCGTATGTGGTA--
TTC 475
      |||      | |      ||| ||||      ||| | |||      | | | | | |||
|||
Db          1076
GGTTTTTTTTCTCTTCCCATTAAGAAAAACTGATGCCAAAAATAACTTCTCAGATATTTTC 1135

Qy          476 A-----GAC-----TGGTTGCATACAGCATT-----
CAAAACCAGTGCTGGAATAGC 517
      |      |||      ||      | | | |||||      |||| | |||| | |

||
Db          1136 AAGTATGACTTTTATGAAGGGAAAAAGCATTTTTGTTTGCAAATCA-TGCTTCAGT-
GC 1193

Qy          518 TTGCCCCAAAGTGGTAGAGTTATAAAAGGATATA-----CATTGAC-
GTTTCTTAAA-- 568
      |||      ||| || || || | |      | | ||      | | || || || ||

Db          1194 AGGCC----AGTTGT-
GAATTGTGATGGCTTTTATTTCTCCTGGGGCTGTAACTTTAAGG 1248

Qy          569 ----AGCATGTGTAA 579
      || || || ||

Db          1249 GTTTAGAATTGGAA 1263

```

RESULT 11

US-10-478-914-64

; Sequence 64, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 64  
; LENGTH: 2120  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-64

Query Match 41.8%; Score 1357; DB 1; Length 2120;  
Best Local Similarity 36.6%; Pred. No. 1.3e-80;  
Matches 345; Conservative 0; Mismatches 217; Indels 380;  
Gaps 42;

Qy 1 CTTTTTTTTTTTT-----  
TTTTTTAAAGTCTTTAGTATATTTATTTGTATAAA 48  
|||| || || || | | | | | | | | | |

||  
Db 1130 CTTTATTGTTCTTGAAAGCCCCTGCTCTCTCTGAGCCTT--  
ATTTTCATCATCTGTAAAT 1187

Qy 49 GAG--TAAACAAAGTG-CATATAGAGTGGCCACAGGTTTGAC---  
ACAGAGACCTTGGTG 102

| | | | | | | | | | | | | | | |  
Db 1188  
GGGAATGTCCTGAATGACTTCTAAGGCTCTTTCTGGCTTGAAGTGTGAGAGCC----- 1240

Qy 103 ATGTAGGCTATGAACAAATTT--  
AAATGGCAACTTCATTGCTGCCACTGAACCAATC--C 158

| | | | | | | | | | | | | | | |  
|  
Db 1241 ---AAGCCCACATCCCTCCTTGGGCAGGGCAGCAGC--  
TGCTGCCACAGCCTCCAGCGGC 1295

Qy 159 TG--AATTTGGGCTC---AACAGGT-----GAAAAGTAACAA-  
TATC 194

| | | | | | | | | | | | | | | |  
||  
Db 1296  
TGCCACTGTGGGCTCTGGGAGCCGGAGCGATGCTGTGTGAGAGGCAGAGTGCCAAGGATG 1355

Qy 195 AAACGAATACTAAACAG-----  
CATAACAAAAGATTT 227

| | | | | | | | | | | | | | | |  
||  
Db 1356  
AAGCTGGCACTGAACAGTAAGCGGCTCCAGGCCTCCTCTGGGCCCAGGGCCCAGCCAATT 1415

Qy 228 TCAGACTCTTGGTCATAAAGACCGTAATC--GTTACATT---GAATC-  
AATGACTAAA 280

| | | | | | | | | | | | | | | |  
|  
Db 1416 TCTGT-TC-  
TGTTCTGTAGAACGCTCTCTGGATTCCATAGCTGGAATCTCCTCTCTTAG 1473

Qy 281 C-----ATTTTGTATTACCCAGC-----TACCTCCAAGCAAAGTGAAGTCTG---  
TCT 325

```

      |      |      |      |      |      |      |      |      |      |
||
Db      1474
CTCAGTGAAAAATAAAAATCCCAAATGGTGTGCCTACCTTCCCACCTTCTTACTGGCTTCC 1533

Qy      326 AGTGGATCCTGAAGTCCATAGTGCCTCTAGCC-----
GGGT----- 361
      || |  || || || || || || || | || ||      || ||
Db      1534 AG-
GAGTCTTGGAGTTCATAGCCCCCGAGCCTGCCTTAAAGGGGTGTCCTCCACCCCCC 1592

Qy      362 -----CTT-----TCAAGTGTT-----
GC 375
      |||      || || || |

||
Db      1593
ACCTACAGCTTCACAGGAGGGGAGAGGGCATCCAGTGCTAGGAGTAGAAGTGTCTCCAGC 1652

Qy      376 AC-----CACAGGGTGATGAT-----
TGATGGTAAAAACAGGGATCAACCC 416
      |      | | || || || | |      || | | | | | | | |
|
Db      1653
TCTGTTCTCTTGGGGCCCTGGGTGAAGGTGGGGTCTGGGGCTTATGAAATAGGTCTGGGC 1712

Qy      417 TTGTAGATCGGTGG-----TAAGTATGGAA-----ACC-----
CTCTA 449
      || || | |||      || || || ||      ||      |

||
Db      1713
TTTGAGGAGGATGGAGCAGCCTCATTATGTGGGGAAGATGGGGCCTCTGGGGCGTCACTG 1772

Qy      450 AGAACA---GT-----GCAGC-----
GTATGTG-----G 470
      ||| ||  ||      || || |      || || ||

Db      1773
AGACCACAGGTGGGGCCGGGGCTGGACCGCAGCTGTCTTGGGTGCCTGTGCCTGCACCCC 1832

Qy      471 TATTCAGACTGGT-----TGCA-----
TACAGCATTCAAA 500
      | ||| || |      || ||      || || || || ||
|
Db      1833
TCCTCACCCCTAGAGACGGAAGATGTGCAAAAAGAAAGAAGGAAGGGCAACTGCATTCCAG 1892

Qy      501 ACCAGTGCTG-----
GAATAGCTTG--- 520
      ||  |||      | | || || ||

Db      1893
CCCCACACTGTGATGACTTTGAGCCTGTCCTTTCCCTCCTTGAGCCTGTCTTGCTTGCTC 1952

Qy      521 -----CCCCAAAGTGGTAGAGTTA-----
TAAAAGGATA 549
      || || || | |||      ||      | || || ||

|
Db      1953
CCTGTAAAATGAACAGTCCCCCTCTCCCCCAAATAGTAATAATACATGTTTCAAAGGGTG 2012

Qy      550 TACAT-----TGACGTTTCTTAAAAGCATGTGTAA 579
      |||      || || | | || || ||

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Db 2013 ACCATTTATAAAGCATATGACAAACCATATCAATAAATGTAA 2054

RESULT 12

US-10-478-914-57/c

; Sequence 57, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-255226

; PRIOR FILING DATE: 2001-08-24

; NUMBER OF SEQ ID NOS: 417

; SOFTWARE: PatentIn version 3.2

; SEQ ID NO 57

; LENGTH: 2336

; TYPE: DNA

; ORGANISM: Homo sapiens

US-10-478-914-57

Query Match 41.8%; Score 1356; DB 1; Length 2336;  
Best Local Similarity 39.3%; Pred. No. 2.6e-80;  
Matches 367; Conservative 0; Mismatches 198; Indels 368;  
Gaps 46;

Qy 1 CTTTTTTTTTTTTT-----TTTTTTAAAGT-----

CTTTAGTATATTTATT 40

|||| | | | | | | | | | | | | | | | |

||

Db 1372

CTTTTACATTCCTTCCATATCACAGGTACTATGAAGTAAGGAGACTTTTAGGTTTCTTTT 1313

Qy 41 TGTATAAAG-----AGTAAACA-AAGTGCATA-----TAGAGT--

GGCCA-- 77

||| | || | | | | | | | | | | | | |

Db 1312

TGTCTTAAACTCAGACAGCTTTGTAAGCAGTAGTGTGTAGATTACAAGAGTTAGACAAAA 1253

Qy 78 -CAGGTTTGACACAGAGACCTTGGTGATGTAG--GCTATG-----

AAC 117

|||| | | | | | | | | | | | |

|||

Db 1252

GCAGGCGCGACTGAGAAGAGTTGGTGGGGGAGAAGCTTGGGGCACTTCCTGTCACTCAAC 1193

Qy 118 AAATT-----TAAATGGCAACTTCAT-TGC--

TGCCACTGAACCAATC----- 157

| ||| | | | | | | | | | | | |

Db 1192

ACATTCCAGATCACTAAAAAATTTCCACACCCTCTGCATTCCCCCTTGCCCACTCCAGTT 1133

Qy 158 -----CTGAAT-----TTGGG-----

CTCAACAGG- 177



```

|||||
|||
Db      1132
CCCCGTATTTTCTGATTCCATATGTTGTGGTATTTACCATACTTCTCTCCCTCACTAGGC 1073

Qy      178 --TGAAAAGTAACAATATCAAACG-----AATACT-----
AAACAGCATAAC--- 217
|| ||| || ||| | | | | | | | | | | |
Db      1072 TCTGGCAAG--
ACTGCTTCAGAGGGGATGCATTTCCTTTAGATTGCACAAAGCGGAGCTGG 1015

Qy      218 -AAAAAG-----ATTTTCAGACTCTTGGTCATAAAGACCGTAATCGT-----
TCACA 263
||||| | | ||||| ||| | | | | | | |
|||||
Db      1014 GAAAATGGCTGGCAGTTTCAGAATCTAG----
TCACGATCGCACGCATGAGCACCTCACA 959

Qy      264 TTGAATCAATGACTAAACATTTTTGATTACCCAGCTACCTCC----
AAGCAAACCTG---- 315
||| ||| | || ||| ||| ||| ||| |||
Db      958 ---CATCCATGTCCCTACCC-----
GCCCCCCCCGCTCCCGCCCCTGCAGCTGGCTGACCT 907

Qy      316 -----AAAACTGTCTAG---
TGGATCCTG----- 336
| ||||| | ||| |||
Db      906
GTCTCACCCACTGCTGGCCTATCGAACGGCCAGGACTGTCTGGTTTTGGCTCGTGCCTTT 847

Qy      337 ----AAGTC---CATAG-----TGCCTCTA-----
GCCGGGT 361
| ||| | ||| ||||| |||
||
Db      846
GTCCATGTCTGGCTTAGTTCTCTCTGTCTATGCTTGCTCTACCCCCACCGCCCCAGGC 787

Qy      362 CTTTCAAGTGTT--GCACCAC-----
AGGGTGATGATTGATGGTAAAAAC----- 404
||||||| || ||| ||| | | | |||||
Db      786
GGCACAAGTGTTTGGCCACACAAACTAGAGATAGAAAAGGTGGTAAAACTTCAAACCTT 727

Qy      405 -----AGGGATCAACC-----CTTGTAGA-----
TCGGTGG 430
| ||| | |||| | |||
Db      726
TTCTAAATTCTCCAACAGTTTATTTCTTGTGAATTTCTTCCTTCTTTAAATACTCCATTT 667

Qy      431 TAAGTATGGAAACC-----CTCTAAGAAC-----
AGTGCAGCGTATGTG---- 469
|||| | || |||| | | ||| | |||
Db      666
TAAGAAAACAAAAAATTAATTATCTAAAGGCAAAGAATGGAAAGCAACCTTTGTGTTCC 607

Qy      470 GTATTCAGACTGGTTGCATACAGCATTCAAACCCAGTGCTGGAAT-----
AGCTT 519
||| |||| | |||| | ||| ||| |||
|||||
Db      606

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Qy 94 -----ACCTTGGTG-----ATGTAGG-----  
CTA 112  
|  
|  
Db 2339  
CAAAGATCCTTAATTTCCCAAAGACTTCCTGAGCAAAAGGACTACATGTGGGAAATCAA 2280  
|  
|  
Qy 113 TGAAC-----AAATTTAAA---TGGCAAC-  
TTCATTGCTGCCACTG--- 149  
|  
|  
Db 2279  
TGAAAACAGGAATGAGAAGAGAAAGTTAAAAATTGGTTGCTTTTGTTCCTGTCATTGGGG 2220  
|  
|  
Qy 150 -----AACCAATCC-TGAATTTGGGCTCAACAGGTG--  
AAAAGTAACAATA 192  
|  
|  
Db 2219 ACTTTTGGTCTTCTAAACATTCTTGAGTTC---  
CTCCACATGAGTTTTTAATATCA--A 2165  
|  
|  
Qy 193  
TCAAACGAATACTAAACAGCATAACAAAAAGATTTTCAGACTCTTGGTCATAAAGAC--C 250  
|  
|  
Db 2164  
TCTAGCAAAAATTAAACAAACAAAAAAGGCCTCTGAAAGTCAGGATACTGACCACCTC 2105  
|  
|  
Qy 251 GTAATCGTTCACATT-----GAAT--CAATGACTAAACATTT--  
TTGATTAC 293  
|  
|  
Db 2104 GGCATCTCTCCCCTTCCCCACTGCTTGCGAATGCCAGTG-  
CTGGCCTGTTCTTAAACGC 2046  
|  
|  
Qy 294 -CCAGCT--ACCTCCA-AGCAAAGTGAAGTGT-CTAGTGG-----  
ATCCTGAAG 339  
|  
|  
Db 2045  
ACCAGCTCATCCCCAGAGCAGCCTGTGTGCTCTGCCAGCGACTGCTACTTCTCTCCGG 1986  
|  
|  
Qy 340 TC-----CATAGTGCCT-----CTAGCCGGGTCTTT-----  
CAAGTGTTGCA 376  
|  
|  
|  
Db 1985 CCTCAGCTCAACATCCCAGCTATGCTACCCTGGGCTATGTGAGCTTGGGCAAGT-  
TAGCA 1927  
|  
|  
Qy 377 -----CC-----ACAG-----GGTGATG-----  
ATTGA 394  
|  
|  
|  
Db 1926  
TACATCTCTAGGCCTCTCTTTCCATGGATACAGAGAAGATGGTGATGCCTACTTCATAGA 1867  
|  
|  
Qy 395 ----TGGTAAAAA----CAG-----  
GGATCAACCC-----T 417  
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; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-60

Query Match 41.5%; Score 1345.5; DB 1; Length 2022;  
Best Local Similarity 39.3%; Pred. No. 6.9e-80;  
Matches 370; Conservative 0; Mismatches 201; Indels 371;  
Gaps 50;

Qy 1 CTTTTTTTTTTTTTTTTT---  
TAAAGTCTTTAGTATATTTATTTGTATAAAGAGTAA--- 54  
||||| | | | | | | | | | | | | | | | | |  
Db 2000 CTTTTTTTTTTTTTTTTTAGATGGAGT-  
TTTGCTCTTTTGCCAGGCTGGAGTGCAATGG 1942

Qy 55 -----ACAAAGT--GCATATAGAGT-----  
GGC 75  
| | | | | | | | | | | | | | | | | |  
| |  
Db 1941  
CGCGATCTCGGCTCACTGCAACTTCCGCCTCCTGGGTTCAAGCTATTCTCCTGCCTCAGC 1882

Qy 76 CAC-----AGGTTTGACAC-AGAG-----  
ACCTTGGTGATGT 106  
| | | | | | | | | | | | | | | | | |  
Db 1881  
CTCCTGAGTAGCTGAGGTGAGAGGACTGACGCGAGAGGATTGCTTGAGCCTAGGAGGTTG 1822

Qy 107 AG---GCTATGAACAAATTTAAATGGCAACT---TCATTGCT-----  
GCC 145  
| | | | | | | | | | | | | | | | | |  
|  
Db 1821 AGGTTGCAGTGAGCTGTGTTCAC--  
GCCACTGGACTCCAGGCTGGGTGACAAAGCAAGAC 1764

Qy 146 ACTG-----AACC-----  
AAT 156  
| | | | | | | | | | | | | | | | | |  
| |  
Db 1763  
CCTGTCTCAAAAACAAAACAAAACAAAACAAAACAAAACAAAACAAAACAAAAC 1704

Qy 157 CCTGAATTT-----  
GGGC----- 169  
| | | | | | | | | | | | | | | | | |  
Db 1703  
CCTGAGTTTAAGTTTGAATTTAAGACCTGTAGGGACAGCAGATTAGTTCTACTTTAATGG 1644

Qy 170 -----TCAACAGG-----TGAAAAGTA---ACAATATCA----  
AACGAAT 202  
| | | | | | | | | | | | | | | | | |  
Db 1643  
GTATGCATCATCTGGAAAGCAAGGGTCATAAAAAGAAGATAACATCTTCACTGGCACCATC 1584

Qy 203 AC-----TAAACAG-CATAACAAAAGA---  
TTTTCAGACTCTTGGTCATAAAGACCGT- 252  
| | | | | | | | | | | | | | | | | |  
|  
Db 1583 ACATCAGTCATCAGTCCTTAGATACAGAACCTTTACTGACTCCC--  
TCAAACTTCCATG 1526

Qy 253 -----AATC-----GTTT----ACATT-  
GAATCAATGACTAAACATTTTGGAT-- 290  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1525  
CTTCCAAACTAACCAAGCAGTTCTTCTACATTGGGATCATCGAATTTCCCTTCATGTTCC 1466

Qy 291 -----TACCCAGCTACCTCC-  
AAGCAAAGTGAAGTGTCTAGT 328  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1465  
AACTCTCCTCTAGCTTCAATATACACATAGACAACCTTAGCCATCTGAAAACCTACTTTT 1406

Qy 329 GGA----TCCTGA---AGTCCA--TAGTGCCTCTAGCCGGGT---CTTTC----  
AAGTGT 372  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1405 AGAATATTCCTGAGTGGTTCCACGTAAGTCCTCT-  
GCCAGATTACATACCCATAAATTC 1347

Qy 373 TGCACCACAGG-----GTGATGATTGATGGTA---AAAACAGGGATCAA---  
CCCTT 418  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 1346  
TACTTCATAAGCCCATACTGTTCTTAAAAAGAAATAGAAAAATATATCAATATAACTT 1287

Qy 419 GTAGATCGG-----TGTAAGTATGGAAACC--  
CTCTAAGAACAGTG----- 458  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1286  
TAAATAAGACACAAACCTTCATGAAAATATAGTCATCAAATTTATTTTCATTGGGATGC 1227

Qy 459 CAGCGTATGTGGTATTC---AGACTG--GTT-----GCATAC-----  
AGCATTCAAAA 501  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1226  
CATTTTTTGAAGAATTCCTAAGACTAATGTTTCTTGACATGCAAGAGTTAGCATTAAATAG 1167

Qy 502 C---CAGTGCTGGAATAGCT--TGC-----  
CCCAAAGTGGTAGAGTTATAAAG 545  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1166  
CTTACGTTACTATAAATACTGCTGCTTGAAGCAGTACAAGTGTGTTTAGAGTTTAAAGAC 1107

Qy 546 GATATACATTGACGTTTCTTAAA-----AGCATGTGTAA 579  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1106 TACAGACTTT--CATTACTCAAATCTTATTTCAGTAAATGTAA 1067

RESULT 15

US-10-478-914-63

; Sequence 63, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 63  
; LENGTH: 1813  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-63

Query Match 41.5%; Score 1345; DB 1; Length 1813;  
Best Local Similarity 44.8%; Pred. No. 4.2e-80;  
Matches 370; Conservative 0; Mismatches 180; Indels 276;  
Gaps 54;

Qy 1 CTTTTTTTTTTTTTTTTTAAAGTCTTTAGTATATTTATT-----  
TGTAT- 45 ||||| ||||| | |||| ||| | ||| |||| || |||  
|  
Db 570 CTTTATGTTTTATATTTTC---  
TCTGTTGTACATTTGTTGCAGCTCCTGCCAATGTCTC 626  
  
Qy 46 -----AAAGAGTAAACA-----AAGTGCATATAG----AGTGGC-CAC-----  
AG 80 | | | || || ||| | | ||| || |||  
||  
Db 627  
TTTCCCTATATTGTTTCATTTTATAATAGCAGAAAACATTAGTAGCGCACTCTGTGGTGAG 686  
  
Qy 81 GTTTG---ACACAG-----  
AGACCTTGGTGATGTAGGCTATGAACAAATTTAAATGGCA 131  
| || | ||| ||||| || ||| | || |||| | ||  
Db 687 ATATGGAATCAGTAGAATGAACCTTGG---AGTTGGCACT--  
TCATATTTTATTGATG 741  
  
Qy 132 ACTTCATTGCTG-----C-CACTGAACC-AATCCTGAATT---  
TGGGCTCAAC---- 174 ||| | ||| | | ||| || | ||| ||| || | |  
Db 742  
ACTGTAATGCAGTGTGAGTTTCGCATTGCACATAGTCTTGATTTAAATGATTACCTCTTTT 801  
  
Qy 175 ----AGGTGAAAAG-TAACAATATCAAACGAATACTAAAC----  
AGCATAACAAAAAG-- 223 | | ||| | | || | | | ||| ||| ||||| | ||||  
Db 802  
ATGAAAGCAAAATGTTTGTAAAGACGGCCATGTTGTAGACAGGGAGCATAAAATAAAGGA 861  
  
Qy 224 -----  
ATTTTCAGACTCTTGGTCATAAAGACCGTAATCGTTCA- 261 || || | | ||||| | || | |  
|||||  
Db 862 GAGGAAGTAGGACAAGTAACATTTCTCTGTC-CTTGGT-TTCTTGAAC---  
AATGTTTCAG 916

Qy 262 CATTGAATCAATG-ACT-----  
AAACATTT----- 285  
||||| |||| | ||| ||||| ||  
Db 917  
CATTGACTCAAGGCACTGTCATTTTCTGAGAGTACAGTATAGAAACAATTGAGCATCAAGCA 976

Qy 286 -----TTGATTACCCAGCTACCTCC-----  
AAGCA----- 310  
|| || |||| | |||| |||||  
Db 977 TAGATGAAACATGGAGGCTTAGTTTCCCA-  
CCCCCTCCAAAAGAAGCACTTTACTTATGT 1035

Qy 311 -----AACT-GAAAACTGTCTAGTGGATCC-  
TGA 337  
||| | | ||||| ||| || |  
||  
Db 1036  
ACTCACATATTTTCGGTTTCTGTGGCTGTGTTACTGGGTAGCTGTCCAGTTGAGACGAGA 1095

Qy 338 AGTCCA-TAGTGCCTCT---AGCCGGGTC----TTTCAAGTGTT----  
GCACCA----- 379  
|| | | ||| | ||| | ||| ||| | ||||| |||||  
Db 1096  
TGTTTACTTAAAGCCACACCCAGCAGAGTCAGCTTTTAAATGTGTTGGGGGCACTATTTTAA 1155

Qy 380 --CAGGGTGATGATTGATGGTAAAAACA-----  
GGGATCAACCCTTGATAGATCGGTGGTA 432  
| ||| ||||| || | | || ||||| || ||| || | ||  
|  
Db 1156 TCCT--GTGCTGATT--TGTAACCATCATCTATGGGAT--GCCTTTG-AGTT--  
GTAAAA 1206

Qy 433 AGTATGGAAACCCTCTAAGAACAG--TGCAGCGTA-TGTGGTATTCAGACTGGTTGC-  
AT 488  
|| | ||| || | |||| ||||| || | || | || | |||  
|  
Db 1207 AGAGGGAAAATACTAGATTCACAGGTTGCAGCTTACTATGTTTTT--  
GAATATTTGAGTT 1264

Qy 489 ACAGCATTCAAAC----CAGTGCTGGAAT--AGCT-TGCCCA-----  
AAGTGGTAGAG 536  
| | ||| | | | || || | | | || | ||| || |||  
||||  
Db 1265  
GCTGTATTAATAGCACAGAAGAGCAGTATTTAAGTTATGCAGCATTTATCTATGGCAGAG 1324

Qy 537 TTATA-AAAGGATATACAT-TGACGTTTCTTAAAGCATGTGTAAT 580  
| | | || |||| | || ||| | | | || |||||  
Db 1325 AGAGATAGAGAATATGTGTATG--GTTCCATTA---CAAGTGTAAAT 1365

Search completed: March 9, 2010, 15:52:08  
Job time : 3.08146 secs

GenCore version 6.3  
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OM nucleic - nucleic search, using sw model



Run on: March 9, 2010, 15:51:16 ; Search time 1 Seconds  
 (without alignments)  
 1134.946 Million cell

updates/sec

Title: US-10-572-905-22  
 Perfect score: 6518  
 Sequence: 1 gaattccctgaggaggcgaa.....taagagaacattataattgc  
 1044

Scoring table: BLOSUM62  
 Gapop 10.0 , Gapext 0.5

Searched: 417 seqs, 79705 residues

Total number of hits satisfying chosen parameters: 834

Minimum DB seq length: 0  
 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
 Maximum Match 100%  
 Listing first 45 summaries

Database : 7335755.seq:\*

Pred. No. is the number of results predicted by chance to have a  
 score greater than or equal to the score of the result being  
 printed,  
 and is derived by analysis of the total score distribution.

#### SUMMARIES

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No.	Score	Query	Match	Length	DB	ID	Description	
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c	1	2967	45.5	2120	1	US-10-478-914-64	Sequence 64,	
Appl	2	2963.5	45.5	2120	1	US-10-478-914-64	Sequence 64,	
Appl	3	2953	45.3	3210	1	US-10-478-914-4	Sequence 4,	
c	4	2898	44.5	3210	1	US-10-478-914-4	Sequence 4,	
Appli	5	2818.5	43.2	2437	1	US-10-478-914-61	Sequence 61,	
Appl	6	2816	43.2	2437	1	US-10-478-914-61	Sequence 61,	
c	7	2715	41.7	2198	1	US-10-478-914-17	Sequence 17,	
Appl	8	2696	41.4	2198	1	US-10-478-914-17	Sequence 17,	
Appl	9	2635	40.4	2495	1	US-10-478-914-20	Sequence 20,	
Appl	10	2623.5	40.3	1946	1	US-10-478-914-62	Sequence 62,	
Appl	11	2555.5	39.2	2495	1	US-10-478-914-20	Sequence 20,	
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Appl								

c 12	2502	38.4	2336	1	US-10-478-914-57	Sequence 57,
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c 24	2174	33.4	816	1	US-10-478-914-15	Sequence 15,
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Appli						
26	2139.5	32.8	867	1	US-10-478-914-6	Sequence 6,
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27	2103	32.3	816	1	US-10-478-914-15	Sequence 15,
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28	2102	32.2	794	1	US-10-478-914-13	Sequence 13,
Appl						
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c 30	2064	31.7	794	1	US-10-478-914-13	Sequence 13,
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c 31	2011	30.9	1020	1	US-10-478-914-68	Sequence 68,
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32	1996.5	30.6	839	1	US-10-478-914-16	Sequence 16,
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33	1981	30.4	717	1	US-10-478-914-42	Sequence 42,
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34	1969.5	30.2	1020	1	US-10-478-914-68	Sequence 68,
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35	1968	30.2	938	1	US-10-478-914-69	Sequence 69,
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c 36	1966	30.2	938	1	US-10-478-914-69	Sequence 69,
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c 37	1959.5	30.1	839	1	US-10-478-914-16	Sequence 16,
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c 38	1958	30.0	778	1	US-10-478-914-35	Sequence 35,
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c 39	1957.5	30.0	811	1	US-10-478-914-37	Sequence 37,
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40	1951	29.9	889	1	US-10-478-914-9	Sequence 9,
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c	42	1939	29.7	816	1	US-10-478-914-38	Sequence 38,
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	43	1930	29.6	816	1	US-10-478-914-38	Sequence 38,
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c	45	1911.5	29.3	717	1	US-10-478-914-42	Sequence 42,
Appl							

# ALIGNMENTS

## RESULT 1

US-10-478-914-64/c  
; Sequence 64, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 64  
; LENGTH: 2120  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-64

Query Match 45.5%; Score 2967; DB 1; Length 2120;  
Best Local Similarity 38.7%; Pred. No. 5.6e-188;  
Matches 716; Conservative 0; Mismatches 315; Indels 820;  
Gaps 109;

Qy 4 TTCC---C-----TGAGGAGGCGAATCCGG--CGGGTATCAGAGCCA-----  
TCAG 44

|||| | |||||| | | || | || | | || |

|||  
Db 1852 TTCCGTCTCTAGGGTGAGGAGG-  
GGTGCAGGCACAGGCACCCAAGACAGCTGCGGTCCAG 1794

Qy 45 AACCGCCACCATGACGGTGGGC-  
AAGAGCAGCAAGATGCTGCAGCATATTGATTACAGGA 103  
||| | || | |||| | || | || | || || || ||

|  
Db 1793 CCCC GCCCCA--CCTGTGGTCTCAGTGACGCCCA-  
GAGGCCCCATCTTCCCCACATAA 1737

Qy 104 TGAGG---TGCATCCTGCAGGACGGCCGGATC---TTCATTGG-----  
CACCTT 146

|||| | |||||| | | || || | |||| |  
|||||

Db 1736  
TGAGGCTGCTCCATCCTCCTCAAAGCCCAGACCTATTTTCATAAGCCCCAGACCCCACCTT 1677

Qy 147 -----CAAGGCTTTTGACA-----AGCAC---  
ATGAATT 172  
|| ||| |||| ||||| |||

|  
Db 1676  
CACCCAGGGCCCCAAGAGAACAGAGCTGGAGACACTTCTACTCCTAGCACTGGATGCCCT 1617

Qy 173 TGATCCT-CTGTGA--CTGT-----GATGAGTTCA-----  
GAAAGATC--A 208  
||| ||||| |||| | ||| || | | | ||

Db 1616  
CTCCCCCTCCTGTGAAGCTGTAGGTGGGGGGTGGAGGACACCCCTTTAAGGCAGGCTCGGG 1557

Qy 209 AGCCAAAGAACTCCAA-AC-----AAG-CAGAAAGGGAAGAGAAGCGAGTC-  
CTCGGTC 259  
| | | ||||| || ||| ||| || | |||| | | | | |

|  
Db 1556  
GGGCTATGAAGTCCAAGACTCCTGGAAGCCAGTAAGAAGTGGGAAGGTAGGCACACCATT 1497

Qy 260 TGG-----TGCT--GCTGCGAGGGGAGAATC-----  
TGG----- 286  
||| || ||| ||| ||||| || |||

Db 1496  
TGGGATTTTTATTTTTCCTGAGCTAAGAGAGGAGATTCCAGCTATGGAATCCAGAGAGC 1437

Qy 287 --TCT-CAATGACAGTAGA-----GGGACCTCCTCCCAAAGAT--  
ACTGG----- 326  
||| || |||| | | ||| || |||| || ||||

Db 1436  
GTTCTACAGGAACAGAACAGAAATTGGCTGGGCCCTGGGCCCAGAGGAGGCCTGGAGCCG 1377

Qy 327 --TATTGCTCGAGTTCCA-----CTTG-----CTGGAGCTGC-----  
CGG 359  
|| || || ||| ||| |||| || || | || |

|  
Db 1376 CTTACTGTTC-  
AGTGCCAGCTTCATCCTTGGCACTCTGCCTCTCACACAGCATCGCTCCG 1318

Qy 360 GGGCCCAGGGATC-----GGCAG-----GGCTGCTG-----  
GCAGAGGAATCCCAGC--- 401  
| ||||| | | |||| || |||| |||| | ||| ||

Db 1317  
GCTCCCAGAGCCCACAGTGGCAGCCGCTGGAGGCTGTGGCAGCAGCTGCTGCCCTGCCCA 1258

Qy 402 -----TGGG-----GTTT---CCA-----  
TGC----- 415  
|||| |||| ||| ||

Db 1257  
AGGAGGGATGTGGGCTTGGCTCTGACAGTTCAAGCCAGAAAGAGCCTTAGAAGTCATTCA 1198

Qy 416 -----CCC-----AGGCTCC-----TGCA-  
GGACTT----- 435  
||| ||||| ||| || |||

Db 1197  
GGACATTCCCATTTTACAGATGATGAAATAAGGCTCAGAGAGAGCAGGGGCTTTCAAGAA 1138

Qy 436 -----GCTGGG-----CCAGTCCG-  
TGGGGTTGGCGGGCCATCCCA 470  
| | | | | | | | | | | | | | | |

Db 1137  
CAATAAAGGTGGAGACTGGAACCTCAGGCCTCCTGTCTGCTGAGGGTGTCTGCCCATGCTC 1078

Qy 471 AC-----AGGTGATGAC-----  
CCCACAAGGAAGAGGTAC- 500  
| | | | | | | | | | | | | | | |

Db 1077  
TCTCTCAGAGTTTCTGAGTGGTGGTGTCTGGAGGGGCTGGACACGCAAGGGAGCTGGCCT 1018

Qy 501 ----TGTTGC-----AGCCG-----CTGCAGCTGCTGCCAC-----  
AGCCA---G 533  
| | | | | | | | | | | | | | | |

Db 1017  
CGTGTGTGTCTGTCTGTGCCGGGATGTGTCTGTGGCTTCTGTCTCTGAACGTGCCAGGGG 958

Qy 534 TATTG---CC-----GGGGCTCC-----  
AAC----- 551  
| | | | | | | | | | | | | | | |

Db 957  
TTTTGTGTCTGTGTGTGTCTCTGTGGGTGCTCCTGTGTGCAGGAAGTTGGGGCCATG 898

Qy 552 -CCAGT-----ACCCA--CCT--  
GGCCGTGGGGGTCTCCCC----- 584  
| | | | | | | | | | | | | | | |

Db 897  
GCCAGAGAGGGATGGGCCTATTCTTACCAATCTTGGGAGGCCTCCACAGGCTGAGCTGGTG 838

Qy 585 -----ACCT-ATGGGCCGA-----GGAGC---  
ACCCCC-----T 609  
| | | | | | | | | | | | | | | |

Db 837  
GGGAGGGTCTGAAGGGTAGAGTGAAGATGGGGACTTTACTCCCAGCGGAGAGGAAGAAA 778

Qy 610 CCA-----GGCAT-----  
GATGGG----- 623  
| | | | | | | | | | | | | | | |

Db 777  
CCAGAAGATAGGCTTGGGGCATGGATGGGAAAGGTCTTGGAACTAGGATGGGGCAAGGGA 718

Qy 624 -----CCCACCT-----CCTGG-----  
TATGAGACCTCCTATG 651  
| | | | | | | | | | | | | | | |

Db 717  
AACAAAGCCCCAAATGGAGTATGGGTCCCTGGAAGTTGACACACTCTTAGCCCTCATGGG 658

Qy 652 GGTCC--CCCAATGGGGATCCC-----  
CCCTGGAAGAGGGACT----- 687  
| | | | | | | | | | | | | | | |

Db 657  
GGCCCAGCCCAGTGGGTAACCCCGGGGAAGTGGTCACATGACGTGACACTTCTCAGCTGA 598

Qy 688 -----CCAATG-GGCATG-----CC-----CCCT-----  
CC 707  
| | | | | | | | | | | | | | | |

||  
 Db 597  
 TTGCTTGAGATCCCCCAGTGTGGCCTGGGCCTTGTCCTTGAGTGAGCCCAGGTTCAAGCC 538  
  
 Qy 708 GGGAATGC-GGCCTCCTCCCCCTGGGATGCGAGGCCTTCTT-----  
 TGACC 752  
 |||| || |||| || ||| || | ||||| |||| ||  
 ||  
 Db 537 AGGAAGGCTGGCCAGCTGCCCAAGGACT--  
 GAGGCCTTCTCCTCCTCCTCCTCTGTGTCC 480  
  
 Qy 753 -----CTTGGCCA-----  
 CAG----- 763  
 ||||| ||||  
 Db 479  
 TCCTCGATCATCTTGGCCAGCTCCCGGGGAGCTCCACGTCTCCACCTGCCATCTGGATC 420  
  
 Qy 764 -----AGTAT-----  
 GGAAGTAGCTCCGCAGA 785  
 |||| |||||  
 ||||| ||||  
 Db 419  
 TGGCTCTCATCTGTCTCGTTCTTGGGTAGCCGGTATTTGTCTCGGAAGTGGCTCCGCAGT 360  
  
 Qy 786 GGCGTGGGCTCG--ATTCTCAGGG-----CCACGTTAC-----CACAGAC--  
 CT 826  
 | | |||| ||||| | | | | | | | | |  
 |  
 Db 359  
 GTGGCCCGCTCTGCCTTCCTCTGTGTGAACTGTGCATCCCGCTCCATCTTCTCTTCCACG 300  
  
 Qy 827 GTTTGTTTCTTATGCT-GTTGT--TCGTGGAGTCTCATG-----  
 GGA 865  
 ||| |||| || || | || | ||||| |  
 Db 299  
 AGTTGCTTCTGATACTCCTCGTACTCCTCCCGGCTCATGCCCTGAGCTTCGGCTGCCGAC 240  
  
 Qy 866 TTGT-CTGGTTTCCCTTA-CAGGGCCCCCTCC-----  
 CCCGGGAATG----- 905  
 |||| | | ||||| | ||| |||| ||| | |  
 Db 239  
 TTGTCCCCATCTCCCTTATCCTCGCCGCCTCCCAGGCTCCCAGTGAGGTTCTTCAGCTGG 180  
  
 Qy 906 -CGCCCACCAAGG-----CCCTAGACTC----ATCTTGGCCCTCCTCAGCTCC---  
 CTG 951  
 ||||| || || | || | ||| ||| || || || |  
 |  
 Db 179  
 CCGCCCACCATGGTCTTCACCATGAACGCCATGGTCTTCGCCGGCCGGGGCACCGGGC-G 121  
  
 Qy 952 CCTGTTTCC---CGTAAGGCT--GTACATAGTCC-----  
 TTTTATCTCCTTGTTGGC 997  
 |||| | || || |||| | || |||| | ||||  
 |||  
 Db 120 CCTGCTACCACGCGCCAGGCACCGGGCA--  
 CGTCCGCGCCTACTTCAGCACTCCAGTAGGC 62  
  
 Qy 998 CTATGAAACT---GGTTTATAATAAACTCTTA-AGAGAACATTATAATTGC 1044  
 | | || || | | | | | | | | | | |  
 Db 61 CAACAGTGCTCGAGGAAT-TCCGCAGCTTTTAGAGCAGAAGTAACACTTCC 12

US-10-478-914-64

Query Match 45.5%; Score 2963.5; DB 1; Length 2120;  
Best Local Similarity 41.6%; Pred. No. 9.8e-188;  
Matches 672; Conservative 0; Mismatches 338; Indels 607;  
Gaps 96;

Db 162  
GAAGACCATGGTGGGCGGCCAGCTGAAGAACCTCACTGGGAGCCTGGGAGGCGGCGAGGA 221

Db 222  
TAAGGGGAGATGGGGACAAGTCGGCAGCCGAAGCTCAGGGCATGAGCCGGGAGGAGTACGA 281

Db 282  
GGAGTATCAGAAGCAACTCGTGGAAGAGAAGATGGAGCGGGATGCACAGTTCACACAGAG 341

Db 342  
GAAGGCAGAGCGGGCCACACTGCGGAGCCACTTCCGAGACAAATACCGGCTACCCAAGAA 401

Qy 165 CATGA---ATTTGATCCT---CTG-TGACT---GTGATGAG---  
TTCAGAAAGATCA 208

|  
 Db 402  
 CGAGACAGATGAGAGCCAGATCCAGATGGCAGGTGGAGACGTGGAGCTGCCCCGGGAGCT 461  
 Qy 209 AGCCAAAGAACTCCA--AACAAGCAGAAAGGGAAGAGAAGCGAGTCCTCGGT-  
 CTGGTGC 265  
 ||||| || | | |||| ||| ||| || || |||| || || |  
 ||  
 Db 462 GGCCAAGATGATCGAGGAGGACACAGAGGAGGAGGAGGAG-  
 AAGGCCTCAGTCCTTGGGC 520  
 Qy 266 TGCTG-----CGAGGGGAGAATCTGGTCTCAATGACAGTAGAGG----  
 GACCTC-- 310  
 |||| | || ||| |||| |||| | | ||| | || |  
 Db 521  
 AGCTGGCCAGCCTTCCTGGCTTGAACCTGGGCTCACTCAAGGACAAGGCCCAGGCCACAC 580  
 Qy 311 -----CTCCCAAAGATACTG-----GTATTGC-TCGAGT-  
 TCCACTTGCTGGAGCTG 355  
 || ||| | | | || | | || || ||||| |  
 Db 581  
 TGGGGGATCTCAAGCAATCAGCTGAGAAGTGTACGTCATGTGACCACTTCC----- 632  
 Qy 356 CCGGGG--GCCCA--GGGATCGGC-----AGGGCT-----  
 GCTGGCAGAGG 392  
 ||||| |||| ||| | ||| ||||| || |||  
 ||  
 Db 633 CCGGGGTACCCACTGGGCTGGGCCCCCATGAGGGCTAAGAGTGTGTCAACTTCCAG-  
 GG 691  
 Qy 393 AATC-----CCAGCTGGGG-----TTCCCATGCCCCAGGCT-----  
 CCTG---- 427  
 | | ||| |||| |||| ||||| || |||  
 Db 692  
 ACCCATACTCCATTTGGGGCTTTGTTTCCCTTGCCCCATCCTAGTTCCAAGACCTTTCCC 751  
 Qy 428 -----CAGGACT---TGCTGG-----  
 GCCAGTCCGTGGGG----- 454  
 || | || | |||| || |||| |||  
 Db 752  
 ATCCATGCCCCAAGCCTATCTTCTGGTTTTCTTCCTCTCCGCTGGGAGTAAAGTCCCCATC 811  
 Qy 455 TTGGC-----GGGCCATCCCAA-----CAG---  
 GTGATGACCCCACAAGGAAG 494  
 || | || || |||| | ||| ||| | || | ||||  
 |  
 Db 812  
 TTCCTCTACCCTTCAGGACCCTCCCCACCAGCTCAGCCTGTGGAGGCCTCCCAAGATTG 871  
 Qy 495 -AGGTACTGTTGCAGCCGCTGCAGCTGCTGCCACAGCCAGTATTGCC-----  
 GGGGC 545  
 ||| | | ||| | | || |||| ||| | | || ||  
 ||  
 Db 872 TAGGAATAG-----  
 GCCCATCCCTCTCTGGCCATGGCCCCAAGTTCCTGCACACAGGAGC 926  
 Qy 546 TCC-----AACCCAGTACCCA-----CCTGGC-CGTG-----  
 GGGGTCCTC 580  
 || || ||| || || ||||| ||| | ||



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Db          927
ACCCACAGAGAGACACACACAGGACACAAAACCCCTGGCACGTTTCAGAGACAGAAGCCAC 986

Qy          581 -----CCC--CACCTATGGGC-----CGAGG--AGCAC-----
CCCCT 609
          ||| ||| | | | |||| ||| |
|||||
Db          987
AGACACATCCCGGCACAGACAGACACACACAGAGGCCAGCTCCCTTGCGTGTCCAGCCCCT 1046

Qy          610 CCAGGCA-----TG-----ATGGGC---CCACCTC--
CTGGTAT 638
          |||| ||                ||          ||||| | ||| | |
|
Db          1047
CCAGACACCACCACTCAGAACTCTGAGAGAGAGCATGGGCAGACACCCTCAGCAGACAG 1106

Qy          639 GAGACC-----TCCTATGGGTCCCCCAATGGGGATC-----
CCCC----- 673
          ||| || ||| | ||| || | | || ||||
Db          1107 GAGGCCTGAGTTCAGT--
CTCCACCTTTATTGTTCTTGAAAGCCCCTGCTCTCTCTGAG 1164

Qy          674 -----CTGGAA-----GAGGGACTCCAATG-----
GGC 696
          ||| ||                || |||| | | |
|||
Db          1165
CCTTATTTTCATCATCTGTAAATGGGAATGTCCTGAATGACTTCTAAGGCTCTTTCTGGC 1224

Qy          697 ATG-----CC----CCCTCC-----GGGAA-----
TGCGGCCTCCT 723
          ||                || ||||| ||| | ||| ||| |
Db          1225
TTGAACTGTCAGAGCCAAGCCCACATCCCTCCTTGGGCAGGGCAGCAGCTGCTGCCACAG 1284

Qy          724 CCCCTG-GGATGC----GAGGCCTTCTTTGACCCTTGGCCA-----
CAGA 764
          || | | | || || | || | || | || |
|||||
Db          1285 CCTCCAGCGGCTGCCACTGTGGGC-
TCTGGGAGCCGGAGCGATGCTGTGTGAGAGGCAGA 1343

Qy          765 GT---ATGGAAGTAGCT-CCGCAGAGGCGTG---GGCTC---
GATTCTCAGGGCCACGT 814
          || | ||| | |||| | | || || |||| | |||| |||| |
|
Db          1344
GTGCCAAGGATGAAGCTGGCACTGAACAGTAAGCGGCTCCAGGCCTCCTCTGGGCCCAGG 1403

Qy          815 TACCACAGACCTGTTTGT-TTCTTATGCTGTTGTTTCG-----
TGGAGTCTCATGGGATTG 868
          ||| || ||| | |||| | |||| | || |||| || ||| |
Db          1404 GCCCA---GCCAATTTCTGTTCCTGTAGAACGCTCTCTGGATTG-
CATAG----- 1454

Qy          869 TCTGGTTTC-CCTTACAGGGCCC-----CCTCCCCCG-GGAATGC--
GCCCA 911
          |||| || |||| | || | |||| || || || || || ||

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Db 1455 -  
CTGGAATCTCTCTCTTAGCTCAGTGAAAAATAAAATCCCAAATGGTGTGCCTACCTT 1513

Qy 912 CCAA-----GGC--CCTAGACTC-----  
ATCTTGGCCC----- 937  
|| | || | | | | | | |

Db 1514  
CCCACTTCTTACTGGCTTCCAGGAGTCTTGGAGTTCATAGCCCCCGAGCCTGCCTTAAA 1573

Qy 938 -----TCCTCAGCTCCCTGCCT---GTTTCCCGTAAGG-----  
CTGTAC--- 973  
| | | | | | | | | | | | | | |

Db 1574  
GGGGTGTCTCCACCCCCACCTACAGCTTCACAGGAGGGGAGAGGGCATCCAGTGCTAG 1633

Qy 974 -----ATAGTC-----CTTTTATCT-----CCT-----  
TGTGGC 997  
| | | | | | | | | | | | | |

Db 1634  
GAGTAGAAGTGTCTCCAGCTCTGTTCTCTTGGGGCCCTGGGTGAAGGTGGGGTCTGGGGC 1693

Qy 998 CTATGAAACTGGTTTATAATAAACTCTTAAGAGAA-----CATTATAATTG  
1043  
| | | | | | | | | | | | | | | | | |

Db 1694 TTATGAAATAGGT-----CTGGGCTTTGAGGAGGATGGAGCAGCCTCATTATGTGGG  
1745

# RESULT 3

US-10-478-914-4/c  
; Sequence 4, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 4  
; LENGTH: 3210  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-4

Query Match 45.3%; Score 2953; DB 1; Length 3210;  
Best Local Similarity 38.6%; Pred. No. 1.1e-185;  
Matches 727; Conservative 0; Mismatches 288; Indels 870;  
Gaps 118;

Qy 1 GAATTCCTGAGG--AGGCG-----  
AATCC----- 23

Db 1856  
 GAATTCCTGAGGCTAGGCATGGTGGCTCACACCTGTAATCCCAGCACTTTGGAGGTCAA 1797  
 Qy 24 GGC GGGT--ATCA---GAGCC-----ATCAGAACC-GC-----CACCATGACG-  
 GTGGG 65  
 |  
 Db 1796  
 GGTGGGAAGATCAATTGAGCCCAGGAGTTCAAGACCAGCCTGGGCAACATAGCGAGAGTG 1737  
 Qy 66 CAAGAGCAGCAAGATGCTGCAGCATATTGATT-----ACAGGAT---GAGGTG-  
 CATC 114  
 |  
 Db 1736 CAT-CTCTACCAAAAG-TG-  
 ATTTTTTTGATTTTTTTGGGACAGAGTCTCGCTCTGTCACC 1680  
 Qy 115 CT-GCAGGACGGCCG-----GATCT----TCATTGGCA-----  
 CTTTCAAGGCTTTT 156  
 |  
 Db 1679 CAGGCTGGAGTGCAGTGGTGTGATCTCGGCTCACT-  
 GCAACTTCTGCCTCCCAGGTTCAA 1621  
 Qy 157 GACAAGCACATGAATTTGATCCTC---TGTGACTGTGATGAGTTCAGAAAGAT-----  
 CA 208  
 |  
 Db 1620 GCAGCTCTCATGTCTCAG--CCTCCCGAGTAGCTGGGAT---  
 TACAGATGCCTGCCACCA 1566  
 Qy 209 AGCCA-----AAGAACTC-----  
 CAAACAAGCAGAAAG 236  
 |  
 Db 1565 TGCCAGGCAAATTTTGGGTTGTTTTTTTTTGGATGGAGTCTTGCTCTATC-  
 AGCAGGCTG 1507  
 Qy 237 GGAAG-AGAAGCGAGTCCTCGG---TCTGGTGTGCTG-----CGAG-----  
 GGGAGAAT 282  
 |  
 Db 1506  
 GAGTGCAGTGGCGCGATCTCGGCTCACTGCAACCTCTGACTCCCGGGTTCAAGCGATTCT 1447  
 Qy 283 CTGGTCTCAATGAC---AGTAG-AGGGAC-----CTCCTCC-----  
 CAAA-- 318  
 |  
 Db 1446  
 CTTGCCTCAGCCTCTTGAGTAGCTGGGACTACAGGCGCGCACCACCATGCCTGGCTAATT 1387  
 Qy 319 -----GATACTGGTATTGCTCGAGTTCCAC----TTG--CTGGAG-----  
 CTGCC 357  
 |  
 Db 1386  
 TTTGTGTTTTTTAGTAGAGATGGGGTTTTACCCTGTTGGCCAAGAGGACCCCCAGCCTTCC 1327  
 Qy 358 GGGGGCCCAGGGATC-----GGCAGGGC-----  
 TGCTGGCAGAGGAATCCAG----- 400

Db 1326 CAAGCCATAGGGGGCTGGTGGGCAGGGCGGCACTTAGCTGCCTGGGGCA-  
 CCCAGTACCT 1268

Qy 401 ---CTGGGG---TTCCCATGCC-----CCAGG-----  
 CTCC----- 425

Db 1267  
 GTCATGAGGCACTTGCCCTGGCCAAAGGTCAGTCCCAAGGCACAGCCACTCCAGAGAGTC 1208

Qy 426 -----TGCAG-GACT-----TGCTGGG-----  
 CCA- 444

Db 1207  
 AAGAGGAGCAGAGACTCCAGAGCAGATGGAAGGAGAGTGGGCTTCTGGGGATTGCACCAA 1148

Qy 445 -----GTCCGTGGGGTT-----  
 GG 458

Db 1147  
 GGAGGAAGCAGAAGGGATGTGCAGCAGCAGAAAAGGAGGAGGACCGGGGGTTCTGAGGG 1088

Qy 459 C-----GGGCCA---TCCCAACAGG-----  
 TGATGAC----- 482

Db 1087  
 CTTGGGGTGATGAGGCCAGAGTTCCAAACAGGGTCTGGGTGCAGGATGAGGACAGAAGAA 1028

Qy 483 -----CCCACAAGG---  
 AAGAGGT----- 498

Db 1027  
 AACAGAGAACCCAAAAGGGGCAAGAGGTTGGTCCCTTACTTTTCACTCTCCTGGGAGGAGG 968

Qy 499 -----ACTGT-----TGCA-----GCC--  
 GCTGCAGCTGCTGCCACA-- 528

Db 967  
 ATGGGTACACCACACAGTTGGATGGTGCATCTTTGCCTGTCTGCACCTGCAGCTCCATGG 908

Qy 529 -GCCA-----GTATTGCCGGGGCTCCAAC-  
 CCAG----- 555

Db 907  
 CACCATGGACCCTGTGCTCCGAGTGGTGGTGCCTGATCTCCACCACCAGGCAGCAGTAGA 848

Qy 556 -----TACCCACCTG-----  
 GCCGTGGGGGTC-- 577

Db 847  
 GGCCGCTATCCAGCAGGGTCAGGTTGCGCATGGTGTGATGGAGAAGTTGCCATGGTGGTCGG 788

Qy 578 -----CTCC---CCCAC---CTATGGGC-----CGAGG-----  
 AGCACCC-----C 607

Db 787  
 AGGCCGACTCCAGCCCGTGGCGCTGAGCCAGGTCGTGGCTGGTGTGGCAGCCTGGTGGC 728

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Qy          608 CTCCAGG-----CAT-----GATGGGCCAC-
CTC----C 632
      | | | | |
|
Db          727
CTCCATGGTGCAGGTGAAGGTCCTGGAACGTGAGGTTGCGGATGGGCCGGCGCTCTGAGC 668

Qy          633 TGGTATGAGACCTCCTATGGGTCCCCCAA--TGGGGATCCCC-
CCTGGAAGAGGGGAC--- 686
      | | | | |
Db          667 AGGTCTGC-ACCTC-----
GCCCTCGAGCTGCGGTACCACGTCTGTAGAAAGGTCACA 615

Qy          687 -----TCCAATGG-----GCATGC-----
CCCCT-- 705
      | | | | |
Db          614
TCGTGCCCTTTGTCCACAGGGCCCCAAGAGCCTGCAGGTGAGGGTGACGTTCTGCCCTCG 555

Qy          706 -----CCGGAATGCGGC-----CT-CCTCC--
CCCT----- 729
      | | | | |
Db          554
GGACAGACATACAGGGAATACGGCGTGGCGACCTTGAAGGCTGCCACCGGACCTGCTCAG 495

Qy          730 -GGGATGCGAGGCCT-TCT-TTGAC-----CCTTG--
GCCACAGAGTATG 769
      | | | | |
|
Db          494
AGAGAGGAGAGCCCTGTACCTGACTGATCCAGTGCTACTCCTGGCAACCCCAGAGCGGG 435

Qy          770 GAAGTAGCT---CCGCAG-----AGGCGTGGGCTCGATTCC--TCAG--
GGCCACG 813
      | | | | |
|
Db          434
GAAGAACCCTTAGCCTCTGCTACTTCCCAGCCACAGGCCAGGGGCATGTCAGCTGACCTCC 375

Qy          814 TTACCACAGAC--CTG--TTTGTT-----
TCTTATGCTGTTGTTTCGTGG 853
      | | | | |
| |
Db          374
CTAAGACTGCCTTCTGCATTTGTTTCAAAACCCCACTCCATCCTAGGCTGTTGTAGGGGG 315

Qy          854 AGTCTCA-----TGGGATTG--TCTGGTTTC-----
CC 879
      | | | | |
|
Db          314
AGTCACAGAAGCTTCCCCAACTAGGGGTGCTCCTGGATGCTGGACAGGGCAGGGAGAGAC 255

Qy          880 TTACAGGGCC-----CCCTC--
CCC----- 897
      | | | | |
Db          254
TTGGAGGGCAGTGATGCAGTCGGGTGTGTCCCTCTTCCCAGTAGAGTATATGCAAAACCT 195

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Qy          898  -----CGGGAATGC-----GCC-
CACCAAGGCCC 920
||
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Db          194
GTTGGGTGGGAGGCAGGTTGGGGAGCAGGAAGGCTGTTTCGAACAGCAGCTCCTTGTCTCT 135

Qy          921  TAGACTCATCT----TGGCC-----
CTCCTCAGCTCCCTGCCTGTTTCCCGTAAGGCTGT 971
|||
|||
Db          134  TGGCCGC-TCTGTAGGGGCCATCAACACCTCTGC-CCCTTCC---
TACTCCTAGGACTGA 80

Qy          972  ACAT--AGTCCTTTTATCTCCTTGTGGC-CTATGA---AACTG-GTTTATAA----
TAA 1019
|||
|||
Db          79
ACATGCCTTCCCATCCTTGCCAGGGAGCACTAAGAGAGCACCTGCGTGTGCAAGGCCTGG 20

Qy          1020 ACTCTTAAGAGAACATTATAATTGC 1044
||
||
Db          19  GCCAGTAGGCCAAC-----AGTGC 1

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Qy 36 -----AGCCATCAGAACCGCCA-----CCATG-----  
 ACGGTGGGCA 67  
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 Db 504  
 TCCGGTGGCAGCCTTCAAGGTCGCCACGCCGTATTCCCTGTATGTCTGTCCCGAGGGGCA 563  
 Qy 68 AGA-----GCA-----GCAAGATG-----  
 CTG 84  
 ||  
 Db 564  
 GAACGTCACCCTCACCTGCAGGCTCTTGGGCCCTGTGGACAAAGGGCACGATGTGACCTT 623  
 Qy 85 CAGCATAT--TGATTAC-----AGGATGAGGTGCA-TCCTGC----AG-  
 GACGGCC 127  
 |||||  
 Db 624  
 CTACAAGACGTGGTACCGCAGCTCGAGGGGCGAGGTGCAGACCTGCTCAGAGCGCCGGCC 683  
 Qy 128 -----GGATCTTCATTGGCACCTT-----  
 CAAGGCT----- 153  
 |||||  
 Db 684  
 CATCCGCAACCTCACGTTCCAGGACCTTCACCTGCACCATGGAGGCCACCAGGCTGCCAA 743  
 Qy 154 -----  
 TTTGACAAGCA----- 164  
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 Db 744  
 CACCAGCCACGACCTGGCTCAGCGCCACGGGCTGGAGTCGGCCTCCGACCACCATGGCAA 803  
 Qy 165 -----CATG---AATTTGATCCT-----CTG-TGACT-  
 GT 189  
 |||||  
 Db 804  
 CTTCTCCATCACCATGCGCAACCTGACCCTGCTGGATAGCGGCCTCTACTGCTGCCTGGT 863  
 Qy 190 GAT-GAGTTCAG-----AAAGATCAA----GCCAAAGAACT-  
 C----- 221  
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 Db 864  
 GGTGGAGATCAGGCACCACCACTCGGAGCACAGGGTCCATGGTGCCATGGAGCTGCAGGT 923  
 Qy 222 -CAAACAAGCAGA-----  
 AAGGGAAG 241  
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 Db 924  
 GCAGACAGGCAAAGATGCACCATCCAACCTGTGTGGTGTACCCATCCTCCTCCCAGGAGAG 983  
 Qy 242 AGAA-----GC-----GAGTCCTCGGT-----  
 CTGGTG 264  
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 Db 984  
 TGAAAGTAAGGGACCAACCTCTTGCCCCTTTTGGGTCTCTGTTTTCTTCTGTCCTCATC 1043

Qy 265 CTGCTGCGAGG-----GGAGAATCTGGTCTCA-----  
 ATGACAGTAGAG----- 303  
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 Db 1044 CTGCACCCAGACCCTGTTTGA-  
 ACTCTGGCCTCATCACCCCAAGCCCTCAGAACCCCCC 1102  
  
 Qy 304 GGACCTCCTCC-----CAAA-----GATAC-----  
 TGGT----- 327  
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 Db 1103  
 GGTCTCTCTCTTTTCTGCTGCTGCACATCCCTTCTGCTTCTCTTGGTGCAATCCCCA 1162  
  
 Qy 328 -----ATTGCTC--GAGT-----TCCACTTG-----  
 CTGGAGCTG 355  
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 Db 1163  
 GAAGCCCACTCTCCTTCCATCTGCTCTGGAGTCTCTGCTCCTCTTGACTCTCTGGAGTGG 1222  
  
 Qy 356 CCGGGGGCC----CAGGGATC----GGCAGGGC---TGC----TGGCAG-----  
 AGGAAT 395  
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 Db 1223 CT--  
 GTGCCTTGGCAGTGACCTTTGGCCAGGGCAAGTGCCTCATGACAGGTACTGGGTGC 1280  
  
 Qy 396 CC----CAGCTGGGGTTC-CCATGCC--CCAGGCTCCT-----  
 GCAGG---- 431  
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 Db 1281  
 CCCAGGCAGCTAAGTGCCGCCCTGCCCACCAGCCCCCTATGGCTTGGGAAGGCTGGGGGT 1340  
  
 Qy 432 --ACTTG-----CTGGG-----CCAGTC-----  
 CGT 450  
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 Db 1341  
 CCTCTTGGCCAACAGGGTGAAACCCCATCTCTACTAAAAACACAAAATTAGCCAGGCAT 1400  
  
 Qy 451 GGGGTTGGCGGGCC----ATCCCAAC-----AGG-TGA-----  
 TGAC 482  
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 Db 1401 GGTGGT-  
 GCGCGCCTGTAGTCCCAGCTACTCAAGAGGCTGAGGCAAGAGAATCGCTTGAA 1459  
  
 Qy 483 CCCACAAGGAAGAGG-TACTGT-TGCAGC---  
 CGCTGCAGCTGCTGCCACAGCCAGT--A 535  
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 Db 1460 CCCGGGAGTCAGAGGTTGCAGTGAGCCGAGATCGC-GCCACTGC-  
 ACTCCAGCCTGCTGA 1517  
  
 Qy 536 TTGC-CGGGGCTCCAACCCAG-----TACCCA-----CCTGGCC--  
 GTGGGGGTCC 578  
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 Db 1518  
 TAGAGCAAGACTCCATCTCAAAAAAACAACCCAAAATTTGCCTGGCATGGTGGCAGGCA 1577  
  
 Qy 579 TC-----



CCCCAC----- 586  
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 Db 1578  
 TCTGTAATCCCAGCTACTCGGGAGGCTGAGACATGAGAGCTGCTTGAACCTGGGAGGCAG 1637

Qy 587 -----CTATGGGCCGAGGAGCACCCC-----  
 CTCCAGGCATGATG----- 621  
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 Db 1638 AAGTTGCAGTGAGCCGA-  
 GATCACACCACTGCACTCCAGCCTGGGTGACAGAGCGAGACT 1696

Qy 622 --GGCCCA-----CCTCCTGGT----ATGAGACCTC-  
 CTATG----- 651  
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 Db 1697  
 CTGTCCCAAAAAATCAAAAAATCACTTTTGGTAGAGATGCACTCTCGCTATGTTGCCCA 1756

Qy 652 ----GGTC-----  
 CCCC AATGGGGATCCCCCTGGAAGAGGGACTCCAA--- 691  
 |||| | ||| || |||| ||| || |||||  
 Db 1757 GGCTGGTCTTGA ACTCCTGGGCTCAATTGATCTTCCACCTTGA-----  
 CCTCCAAAGT 1810

Qy 692 --TGGG-----CATGCCC--  
 CCTCCGGGAATGC----- 715  
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 Db 1811  
 GCTGGGATTACAGGTGTGAGCCACCATGCCTAGCCTCAGGGAATTCTTATAAGAACTCTA 1870

Qy 716 -----GGCCTC-----CTC----CCCCTGGGATGCGAGGCCTT-----  
 CT 746  
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 ||  
 Db 1871  
 TGAAGTAGGCATCACCATCTTCTCTGTATCCATGGAAAGAGAGGCCTAGAGATGTATGCT 1930

Qy 747 ---TTGACC-----CTTGGCCACAGAGTA-----TGGAAGT--AGCT----  
 CCGC 782  
 ||| || | | ||| ||| ||| ||| ||| |||  
 |||  
 Db 1931 AACTTGCCCAAGCTCACATAGCC-  
 CAGGGTAGCATAGCTGGGATGTTGAGCTGAGGCCGG 1989

Qy 783 AG-----AGGCG-TGG----GCTC---GATTCTCAGG-----GC---  
 CACGT 814  
 || || || || || | | ||| || ||  
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 Db 1990  
 AGGAGAAGTAGCAGTCGCTGGCAGAGCACACAGGCTGCTCTGGGGGATGAGCTGGTGCGT 2049

Qy 815 TAC---CACAGACCTG-TTTG--TTTCTTATGCTGT-TGTTCTGGAGT-  
 CTCATGGGAT 866  
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 |  
 Db 2050  
 TTAAGGAACAGGCCAGCACTGGCATTGCAAGCAGTGGGGAAGGGGAGAGATGCCGAGGT 2109

Qy 867 TGTCTGGTTTCC---  
 CTTACAGGGCCC----- 890  
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Db          2110 GGTC-
AGTATCCTGACTTTTCAGAGGCCTTTTTTTGTTTGTTTTAATTTTGGCTAGATTGA 2168

Qy          891 -----CCTC-----CCCCGGAATG-----CGCCCA-----
CCAAGGC 918
          |||          | | |||||          | |||          ||||
|
Db          2169
TATTA AAAACTCATGTGGAGGA ACTCAAGGAATGTTT AGAAGACCAAAGTCCCAATGA 2228

Qy          919 C-----CTA-----
GACTCATCTTGGCCCTCCTCAGCTCCCTGCCTGTTTCCCGTAAGGCT 969
          | | | | | | | | | | | | | | | | | | | | | | | |
Db          2229 CAGGAACAAAAGCAACCAATTTTAACTTTCTCTTCTCATT-
CCTGTTTTTCATTGATTTT 2287

Qy          970 GTACA--TAGTCCTTTT-ATC-----TCCTTGTGGC-----
CTATGAAACT--- 1007
          ||| ||||| ||| || ||| ||| ||| ||| ||| ||| |||
Db          2288
CCACATGTAGTCCTTTTGTCTCAGGAAGTCTTTGGGGAAATTAAGGATCTTTGAAGCTCTG 2347

Qy          1008 -----GGTTTAT-----
AATAAACT-C 1023
          |||| |          ||| ||||
|
Db          2348
AAATAGGTGATCAGGTTAGTGGTGTCTGTCTCAGCTGTCTAAGAGGTTGGAAAATGAACTAC 2407

Qy          1024 TTAAGA-----GAACATTATAATTG 1043
          | |||| ||| || | | |
Db          2408 TCAAGATAGTCACGAAAATACTGAAAG 2434

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RESULT 5

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US-10-478-914-61/c
; Sequence 61, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 61
; LENGTH: 2437
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-61

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Query Match          43.2%; Score 2818.5; DB 1; Length 2437;
Best Local Similarity 36.1%; Pred. No. 4.9e-177;

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Matches 710; Conservative 0; Mismatches 318; Indels 937;  
Gaps 116;

Qy 1 GAATTC-----CCTGAGGAGG-----  
CGAATCCGGCGGGTATCAGAGCCATCAGAA- 46  
| | | | | | | | | | | | | | |

Db 1972 GAGATCAGTGAGGCCTGAAGACATGTGTTCAATATCAAC-  
GGAATCTGGCCTCTCGGGAT 1914

Qy 47 -----CCGCCACC-----ATGAC-  
GGTGGG----- 65  
| | | | | | | | | | | | |

Db 1913  
GAAATATTTCTCCACAACCTTGCTTCAACAATGGCTTATAAGATGCCTGGTGGGTATGAT 1854

Qy 66 -----CAAGAG-----  
CAGCAAGATGCT 83  
| | | | | | | | | | | | |

Db 1853  
TTCCAGGAACATATACAGACTTAACTGTTTCAGGAGACTCCGAGCTCCAGCAATATCCC 1794

Qy 84 G-----CAGCATATT-----  
GATTACAGG 102  
| | | | | | | | | | | | |

Db 1793  
GAAGTGAAGTAAAGAGTTTCATCCACGGCAATTTTGGATTTGTGAAATGTCAGATTAATTG 1734

Qy 103 ATGAGGTGCA-TCC-----TGCAG-----GACGG-CCGGA-  
TCTTCATTGGC-A 142  
| | | | | | | | | | | | |

Db 1733  
AAGAGTCCCAGTCCGTAATTTTTTGCAGCAAAGGTGACAATCCAGATTCCTCACAGAAGA 1674

Qy 143 CCT---TCAAGGCTT--TTGAC-----  
AAGCACATGAATTTGATCCTCTGTG 184  
| | | | | | | | | | | | |

Db 1673 CCTGAGCCAATGCTTTCTTGACTTTTTCTTCTGCTTCACACAGGTCTTTG-  
TCTACCGTG 1615

Qy 185 A-----CTGTGA-TGAGT-----TCAGAAAGATCA--AG--  
CCAAAGAAC----- 219  
| | | | | | | | | | | | |

Db 1614  
AGCTCTCCAGTGACAGAATAAATATATATGAGAAGGATCAGCAGTTCCTCAGGGCTGTAG 1555

Qy 220 TCC-----AAACA-----AGCAG-----  
AAAG 236  
| | | | | | | | | | | | |

Db 1554  
TCCTCGTTGGTTCTCTGGGTTACAGGCTTAATCATGGGCAGCAGCTGATTTAACACAACG 1495

Qy 237 G-----GAAG-AGAAGC-----GA-----  
GTCC 253  
| | | | | | | | | | | | |

||||  
Db 1494  
GACATTGCTGACTCCCCAATGCTCTGAAGAAGGAGCCTTTCAAAGCCAGAAAGTTGTCC 1435

Qy 254 T-----CGGTCT---GGTGCTGCTGCG-----AGGGGAGAATC-----  
TGG 286  
| |||| | || | | | | | | | | |

||  
Db 1434  
CACTTGGCAGTCTGTGGGTGTTTCAACGTTTGAGCTGTGGCCAGTCCAAGCTGGAGGAGG 1375

Qy 287 TCTCAATGA--CAGTAGAG-----  
GGAC----- 307  
| |||| | | |||| | |||

Db 1374  
CCACAATGATTATTAGAGCTTTGAGGTTGTTCTTGAAGAGCTGAATATAGGACATGAGC 1315

Qy 308 -----CTCCTCCCAA-----GAT--ACTGGTAT----TGCT---  
CGAG 337  
| | | | | | | | | | | | | |

Db 1314  
TGTCCCGGTGTGACTCTCCCATACTCATCTTGATTGGCAGGTTTTCTCTGCTTGCCGC- 1256

Qy 338 TTCCACTTGCTG-----GAGCTGCCG-----  
GGGGCCCAGGGATCGGCAGGGC 380  
|||||| | | | | | | | | | | | |

||  
Db 1255  
TTCCACTAGATGTCTCCGAAC TTCCATCACTGCCTCTTTGTGCTTAGTGTTAGTAAAGC 1196

Qy 381 TGC-----TGGCAGAGGAATCCCAG-----  
CTGGGGTTCCCAT 413  
| | | | | | | | | | | | | |

|||  
Db 1195  
TTCCCATAGGGCTTTGGCTGTGGTGTCACTGAATTGTGAAAGACAGCCTGGTGCAACCAC 1136

Qy 414 G-----CCCCAG-----GCT-----  
CCTGCAGGAC 433  
| | | | | | | | | | | |

|  
Db 1135  
ATTATAATTTTCCTCCTCAGTATGGAGTGCAGTGAGCGCTATCATGTTAACCATCACATC 1076

Qy 434 --TTGCTGGGCCAGTCCG-TGGGGTTG-GCGGGC-----CATCCCAAC--  
AG----- 474  
| | | | | | | | | | | | | |

Db 1075  
ATTTGTGTGGCCTGGGAGCTGGGGAAGTGCTGAAATGATCTTCTCTACTAAGTTGTCTCC 1016

Qy 475 GTGATGACCC----CACAAGGAAGA-----GGTACTGT----TGCAGCCGCTGCAG--  
CT 519  
| | | | | | | | | | | | | |

||  
Db 1015  
ATGATGTCCAAC TGCTCCTGTGAGATCCAGGGTTCTGTCCACAAAACCACTGATGCCCT 956

Qy 520 G-CTGCCACAG-----CCAGT--ATTGCCGGGGCTCCAAC--CCAGTACC-----  
C--- 560  
| | | | | | | | | | | | | |

Db 955  
 GCCTGCAGCAGTCTTCTTCTGTTCTTTGCAGGGGCATAATTGGCCAGATCCGCAGCGAT 896

Qy 561 -ACCTGGCCGTGGGGG-----TCCTCCC--  
 CCACCTA----- 589  
 |||| | || ||||| | ||||

Db 895  
 GACCTGACTTAAGGAACCTACAGCAAAACACTCCTCCCGTACTCCTAAATGTTACACAG 836

Qy 590 -----TG-GGCC-----  
 GA 597  
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|  
 Db 835  
 AGAACTGAGGCCTGACACTAGGCATCTGATCTGCAGCAGCAGCTCTGGGGTTAGCGTAGT 776

Qy 598 GGAG-----CACCC-----CCTCCAGGCATGATGGGC-  
 C----- 625  
 |||| |||| |||| | | | ||||

Db 775  
 GGAGTCCACATCACCCAGGCTTCCCAGCTTCTCTTGTCCGGTCGGGCGCTATTAAGGAG 716

Qy 626 ---CACCTCCTGGTAT-----GAGACCTCCTATGG-GTCC---  
 CCCAATG 663  
 || ||||| | || | ||||| | |

||  
 Db 715  
 GTGCACATCCTGGGGTAGCAGTGGGAAAAGGGATGCAAAGCTGGAGTCAAGGCAAAGTG 656

Qy 664 GGGATCCCC-----  
 CCTGGAAGAGGGGACTCCAATGGGC----- 696  
 |||| | | | ||| ||||| | |||

Db 655 GGGAGCAACAGGGGCAAGCAATAACGGGACATGGAACACC--  
 TCGGCCGTGTAGTTTCATG 598

Qy 697 ATGCC-----CCTCCGG-----  
 GAATGCGGCCTCCTC 724  
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||||  
 Db 597 TTGCCCATCCATTACACAGCTTCTCCTCCAGCTGCTCGAACACCGGCTGCTGCC-  
 CCTC 539

Qy 725 C-----CC-CTGGGA-----  
 TGCGAGGCCTTC 745  
 | || ||||| |||||

|  
 Db 538  
 CATCTCGGCCGCTGCCGCCGCTGGGACATGATTAGCTGTGAGGTGGACAGCGTGGCTCAC 479

Qy 746 ---TTTGACCCTTGGCCACAGAGTA-TGGAAGTAGCT-CCGCAGAGG-----  
 CGTGGGC 794  
 | |||| |||| | || ||||| || | |||| | |||

||  
 Db 478 GGTTGTGACC----  
 ACCACACAATACTGGAAGTGACTGCGGCAGATGATGTCCCGTAGGA 423

Qy 795 TCGATTCTCAG---GGCC-----ACGTTACCACAGAC-----  
 CTGTT 829  
 || ||| | |||| | | |||| | |||

|

Db 422 TC---  
TCCACGGTCCGGCCTTTTCAGCAGGCAGCTCAGCACAAACACTGCCTTGGGCTGCT 366

Qy 830 TGTTTCTTATGCTGTTGTTCTGTTGAG-----  
TCTCATGGGATTGTCTGGTTTCC-- 878  
|| || | | || | | || || | | || || || ||

Db 365 TGGCTCCACCACCAAT-  
TGCGTCGGGCTCGAACTCTCGCAGGTGACAGTCAGGGCCCCCCC 307

Qy 879 ----CTTACAGG-----CCCCCTCCCC-----CGG-----  
GAATGCG 907  
| | |||| | | | |||| || |

|||  
Db 306  
ACCGCCTCCAGGAGACGGGTGGATCCGCAGCCCCAGTGCAGGCTCTCGGCGCAGGCGGCG 247

Qy 908 CCC-----  
ACCAAGGCCCTAGACTCATCTTGGCCCTCCTCAGCTCCCTGCCT-----G 955  
|| |||| |||| | || | |||| | | |||| ||

|  
Db 246 TCCAGGTAAACCACAGCCC--  
GTTTCACTTTGGCCAGCACCTGCTCCCATCCTTGCTGGG 189

Qy 956 TTT-----CCCCTAAGGCT-----  
GTACATAGTC----- 979  
| |||| || | | || |

Db 188  
TAAAGGACAGTACGCCCAGGCGCTCATGGTTGGGGATTGCGAGACTTGGGAAACTACGG 129

Qy 980 -----CTTTTATC-----TCC-----  
TTGTGGCCTATGAAACT-----G 1008  
||| | || || | | || ||

Db 128  
TGCAGGAACCTCTTTTCAGAACTCACCGCTTCCGGAATTGGGCTCCGGGAGACTTTGACA 69

Qy 1009 GTTT--ATAATAAACTCT-TAAGAGAACATTAT-----AATTGC 1044  
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Db 68 GTCTCCACAGTACACCCAGTAGGCCAACAGTGCTCGAGGAATTCC 24

# RESULT 6

US-10-478-914-61  
; Sequence 61, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 61  
; LENGTH: 2437



Qy 288 -CT-----CAATGACAGTAGAGGGAC-----CTCCTC--  
 CCAAAG----- 319  
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Db 565  
 GCTGGAGGAGAAGCTGTGTGAATGGATGGGCAACATGAACTACACGGCCGAGGTGTTCCA 624

Qy 320 -ATACTGGTATTGCT----CGAGTT-----CCTT-----  
 GCTGGAGCTGC 356  
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Db 625  
 TGTCCCGTTATTGCTTGCCCTGTTGCTCCCCACTTTGCCTTGACTCCAGCTTTTGCATC 684

Qy 357 -----CGGGGGCCCAGGGAT-----  
 CGGCAGGGCTGCTG 385  
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Db 685  
 CCTTTTCCCACTGCTACCCCAGGATGTGCACCTCCTTAATAGCGCCCGACCGGACAAGAG 744

Qy 386 GCAG--AGGAATCCCAGCTG----GGGTTCC-----CATGCCCCAG----  
 GCTCCTGCA 429  
 | | | | | | | | | | | | | | | | | |

Db 745  
 GAAGCTGGGAAGCCTGGGTGATGTGGACTCCACTACGCTAACCCCAGAGCTGCTGCTGCA 804

Qy 430 GGAC--TTGC----TG---GGCC-----  
 AGTCCGTGGG-- 453  
 | | | | | | | | | | | | | | | |

Db 805  
 GATCAGATGCCTAGTGTGAGGCCTCAGTTCTCTGTGTGAACATTTAGGAGTACGGGAGGA 864

Qy 454 -----GTTGG-----CGGGCCATCCCAACAG-----  
 GTGATGACCC 484  
 | | | | | | | | | | | | | | | |

Db 865  
 GTGTTTTGCTGTAGGTTCTTAAGTCAGGTCATCGCTGCGGATCTGGCCAATTATGCCCC 924

Qy 485 CACAAGGAAGAGGT-----ACTGTTGCAGCC---GCTGCAG-----  
 CTGCTGCCACAGC 530  
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Db 925  
 TGCAAAGAACAGGAAGAAGACTGCTGCAGGCAGGGCATCAGTGGTTTTTGTGGACAGAAC 984

Qy 531 C---AGTATTGCCGGGGC-----TC-----  
 CAACCCAGTA----- 557  
 | | | | | | | | | | | | | | | |

Db 985  
 CCTGGATCTCACAGGAGCAGTTGGACATCATGGAGACAACTTAGTAGAGAAGATCATTTTC 1044

Qy 558 -----CCCA----CCTGGCC-----GTGGGGGT---CCT-----  
 CCCCCAC 586  
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Db 1045  
 AGCACTTCCCCAGCTCCCAGGCCACACAAATGATGTGATGGTTAACATGATAGCGCTCAC 1104



Qy 587 ----  
CTATGGGCCGAGGAG----- 601  
|| | |||||

Db 1105  
TGCACTCCATACTGAGGAGGAAAATTATAATGTGGTTGCACCAGGCTGTCTTTTACAATT 1164

Qy 602 -----CACCCCCTCC-AGGCATGATGG-----GCCCCAC----  
CTC----- 631  
||| | || | || ||| | |||

Db 1165  
CAGTGACACCACAGCCAAAGCCCTATGGGAAGCTTTACTGAACACTAAGCACAAAGAGGC 1224

Qy 632 ----CTGG----TATGAGACCTCCTATGG----GTC-----CC--  
CCA----- 660  
||| | ||||| || ||| | | || |||

Db 1225  
AGTGATGGAAGTTTCGGAGACATCTAGTGGAAGCGGCAAGCAGAGAAAACCTGCCAATCAA 1284

Qy 661 -----ATGGGGA---TCCCCCCTGG-----  
AAGAG 682  
||| ||| || | || ||

|||

Db 1285  
GATGAGTATGGGGAGAGTCACACCGGGACAGCTCATGTCCTATATTCAGCTCTTCAAGAA 1344

Qy 683 GGA-----CTCCAATGGG-CAT----GCCCCCTCCG----  
GGAATGCGGCCTC---- 721  
| ||| |||| || ||| |||| ||| | |||| |

Db 1345 CAACCTCAAAGCTCTAATGAATCATTGTGGCCTCCTCCAGCTTGGACT--  
GGCCACAGCT 1402

Qy 722 -----CTCCCC-----TGGGA-----  
TGCGAGG--C 741  
| ||| | |||| || |||

|

Db 1403  
CAAACGTTGAAACACCCACAGACTGCCAAGTGGGACAACCTTCTGGCTTTTGAAAGGCTC 1462

Qy 742 CTTCTT-----TGACCCTTG-----  
GCCACAG 763  
||| ||| || ||| |||

|

Db 1463  
CTTCTTCAGAGCATTGGGGAGTCAGCAATGTCCGTTGTGTTAAATCAGCTGCTGCCCATG 1522

Qy 764 AGTATGGAAGTAGC-----TCCGCAGAGG-----  
CGTGGG----- 793  
| || | ||| | || |||| | || |

Db 1523  
ATTAAGCCTGTAACCCAGAGAACCAACGAGGACTACAGCCCTGAGGAACTGCTGATCCTT 1582

Qy 794 CTCG-----ATTG---CTCAGG---GC-CACGTTA-  
CCACAGACCTGTTTGTCTTCT 836  
||| |||| | || || |||| || || |||| || ||

|

Db 1583  
CTCATATATATTTATTCTGTCACTGGAGAGCTCACGGTAGACAAAGACCTGTGTGAAGCA 1642

Qy 837 TATG-----CTGTTGTTC---  
GTGGAGTCTCATGGGATTGTC 870



; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 17  
; LENGTH: 2198  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-17

Query Match 41.7%; Score 2715; DB 1; Length 2198;  
Best Local Similarity 36.7%; Pred. No. 4.8e-170;  
Matches 666; Conservative 0; Mismatches 365; Indels 786;  
Gaps 96;

Qy 1 GAATTCCCTGAGGAGGCGAATCCGGCGGGT--  
ATCAGAGCCATCAGAACCGCCACCATG- 57  
| | | | | | | | | | | | | | | | | | | | | |

Db 1885  
GTGGGCCCTGAGGAAGCACCACCAGAGGGAGGAGCTCCACCACCAGGAAATCCCCCAGGC 1826

Qy 58 ---ACGGTGGGCAAG--  
AGCAGCAAGATGCTGCAGCATATTGAT----- 96  
| | | | | | | | | | | | | | | | | |

Db 1825  
ATTCTCTCTGGCATGCCTCCTGCACTCTGGTACAGCTTGGTGATGATGGGGTTGCAAAC 1766

Qy 97 ---TACAG-----GATGAGGTGCA-----TCCTGCAGGACGGCCGGA-  
TCTT---- 134  
| | | | | | | | | | | | | | | | | |

Db 1765  
TTCTCCAGCTCTTTCTGTTGATGTTCAAATTCTTCTTCTCAGCAGTCTGATTCTTATCA 1706

Qy 135 ---CA-  
TTGGCACCTTCAAGGCTTTTGACAAGCA----- 164  
| | | | | | | | | | | | | | | | | |

Db 1705  
AGCCAGTTGATAATTTTATTACACTTGTCCAGAATCTTCTGTTTGTCTCATCGTTAATC 1646

Qy 165 ----  
CATGAATTTGATCCTCTGTGACTGTGATGAGTTCAGAAAGATCAAGCCAAAGAACT 220  
| | | | | | | | | | | | | | | | | |

Db 1645 TTGCCTTGAAGTTTCTCATCTTCAACAGT--TGCTTTC---  
ATGTTGAAGGCATAGGACT 1591

Qy 221 CCAAACAAGCAGAAAGGGAAGAGAAGCGAGT-CCTCGG--  
TCTGGTGCTGCTGCGAGGGG 277  
| | | | | | | | | | | | | | | | | |

Db 1590 C---AAGTGAATTCTTGGATGA-CACCTTGTCCCTCTGCTTCTCAT-  
CTTCAGCTTTGTA 1536

Qy 278 AGAATCTGGTCTCAATGAC----AGTAGAGGGACCTCCT-----  
CCC----- 315  
| | | | | | | | | | | | | | | | | |

Db 1535 CTTCTCAGCT-  
TCCTGGACCATACGTTCAATGTCTTCTTGCTCAAACGGCCCTTGTCAT 1477

Qy 316 -AAAGATACTGGTATTGCTCGAGTTCCACTTGCTGGAG-CTGC--  
CGGGGGC----- 363  
| | | | | | | | | | | | | | | | | |

Db 1476

TAGTGATAGTAATCTTGTCTCTTTTCCCGTACTCTTGTCCACAGCAGAGACATTGAGTA 1417

Qy 364 --CCA--GGGATC---GGCAG----GGCTGCTGGCAGAGGAATCCC-----  
AGCTG--- 403

Db 1416  
TACCATTGGCATCAATGTCAAAAGTGACTTCAATCTGAGGAACACCTCGGGGTGCAGGAG 1357

Qy 404 -----GGGTTC-----CCATGC-----CC-----  
CAGGCT--- 423

Db 1356  
GTATGCCTGTGAGTTCAAACCTTGCCAAGCAGGTTGTTATCCTTTGTCATGGCACGCTCGC 1297

Qy 424 -----CCT-----GCAGGACTTGCTGG--GCCA-----  
GTCCGTG 451

Db 1296  
CTTCATAAACCTGAATAAGCACACCAGGCTGGTTGTCAGAATAGGTAGTGAAGGTCTGTG 1237

Qy 452 -----GGGTTG-----GCGGGCCATC-----  
CCAACAG--G 475

Db 1236  
TCTGCTTGGTAGGAATGGTGGTATTACGCTTGATGAGGACAGTCATGACTCCACCAGCAG 1177

Qy 476 TGATGACCCACAAGGAAGAGG-----  
TACTGTTGCAGCC----- 510

Db 1176  
TTTCAATACCAAGGGAAAGAGGAGTGACATCCAAGAGCAGCAAATCTTGAACATTCTCAG 1117

Qy 511 -----GCTG-----CAGCTGCTGCCACAGC--  
CAGTATTGCCGG 542

Db 1116  
ACTTGTCTCCAGACAAGATGGCTGCCTGGACAGCTGCACCATAAGCAACAGCTTCATCAG 1057

Qy 543 G-----GCTCCAACCCAGTAC----CCACCTG-----  
GCCGTGGGGTCTCTCCCCACC 587

Db 1056 GGTTGATGCTCTTATTAGTTCTTTTCCA-  
TTGAAGAAGTCTTGGAGAAGCTTCTGAATC 998

Qy 588 TATGGG--CCGAGGAGCACC-CCCTCCAGG-----  
CATGA----- 619

Db 997  
TTGGGGATACGAGTAGAACCACCAACCAGGACAATATCATGAATCTGTGACTTGTCTAGT 938

Qy 620 -----TGGGCCCA-----CCTC-----  
CTGGTATG----- 639

Db 937  
TTGGCATCTCGAAGGGCTTTCTCTACTGGGTCCAGGGTGCCACGGAACAGGTCAGCATTC 878

Qy 640 AGACCTCCTAT-----GGG-----  
TCCCCCAATGGG---- 665  
|| || | | ||| || | |

Db 877  
AGTTCTTCAAATCGGGCACGGGTAATGGAGGTATAGAAGTCGATTCTTCATAGAGAGAA 818

Qy 666 --GATCCC-----CC-----CTGGAAGAGGGACTCCAATGGGCATGCCCCCTC-  
CG 708  
|||| | || ||||| | | | || | |

Db 817  
TCGATCTCAATACTGGCCTGGGTGCTGGAAGAGAGGGTACGCTTAGCACGTTTACAAGCA 758

Qy 709 GGAATGCGGCCTCCTCC----CCCTGGGATGC----GAGGCCTTCTT----  
TGACCCTTG 756  
| | | ||| | | | | | | | ||||| | |

Db 757  
GTACGGAGGCGTCTTACAGCTCTCTTGTTCTCACTGATGTCCTTCTTATGCTTGCGCTTA 698

Qy 757 GCCACAG----AGTATGG-----  
AAGTAG--- 776  
| || | | ||| |||| |

Db 697  
AACTCAGCAATAAAATGGTTGACCATTCGTTGTCAAATCTTCTCCACCCAAGTGGGTG 638

Qy 777 -CTCC-GCAG-AGGCGTGGGCTC---  
GATTCTC----- 803  
|||| | | | | || |||||

Db 637  
TCTCCAGCTGTAGACTTGACCTCAAAGATTCCATCCTCAATAGTGAGGATTGACACATCA 578

Qy 804 -----CAGGGC-----CACGTTAC-----  
CACAGACCTGTTTGTTT 834  
|||| | ||||| | | ||||| ||||

Db 577  
AAAGTGCCACCTCCCAGGTCAAAGATGAGCACGTTTCTTTCTGCTCCAACCTTTTTGTCT 518

Qy 835 -----CTTATGCTGTT-----  
GTTCTGAGGTC-- 857  
| || ||| || | ||| |

Db 517  
AAGCCGTAAGCAATAGCAGCAGCAGTTGGCTCATTAAATAATTCTAAGTACATTGAGACCA 458

Qy 858 -----TCATGGGATTGTCTG--GTTTC----CCTTACAG-----  
GGCCC 890  
|| | | | ||| | | ||| || |||

Db 457 GCAATAGTTCCAGCATCTTTGG-  
TAGCCTGACGCTGAGAGTCATTAAAGTAAGCTGGCAC 399

Qy 891 -----CCTC-----CCCCGGGAATGC----  
GC----- 908  
|| | ||| || | || ||

Db 398  
TGTGACCACAGCATTGGTAACAGTCTTCCCAAGGTAGGCTTCTGCAATTTCTTCATCTT 339

Qy 909 -----CCACCAAGG-----CCCTAG-  
ACTC 927

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||
Db          338
TGTCAGAACCATAGAAGACACCTCCTCTGGATAGAAGCTTTTGGTCTCTCCCTTGTATTC 279

Qy          928 ATCTTGGCCCT----CCT--CAGC-----TCCCTGCC-----
TGTTTCCCGTA 964
      ||||| |||   |||  ||||   || |  ||           |||||
|
Db          278
TACTTGGACCTTGGGCCTGCCAGCATCATTACCACCATAAAGGGCCAATGTTTCATATC 219

Qy          965 AGGCTG---TACATAGTCCTTTTATC----TCCT-----
TGTTGGC----- 997
      || |||   |||   || |   |||   |||           | ||||
Db          218
AGACTGGACAACAGCATCATCAAATCTGCGTCCAATCAGACGTTTGGCATCAAAAACGT 159

Qy          998 -----CTATGAAACTGGTTTAT-----
AATAAACTCTTAAGAGAA 1032
                        |  || |||| | || |           || |||  || || |
Db          158
GTTGGTGGGGTTTATTGCAACTTGATTCTTTGCGGCATCACCGATCAACCGTTTCAGTGTC 99

Qy          1033 CATT-----TAATTGC 1044
              || |           || ||
Db          98  CGTAAAGGCGACATAGC 82

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RESULT 8

US-10-478-914-17

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; Sequence 17, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
;   APPLICANT: NAKAGAWARA, AKIRA
;   TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
;   FILE REFERENCE: 7388-80899
;   CURRENT APPLICATION NUMBER: US/10/478,914
;   CURRENT FILING DATE: 2003-11-26
;   PRIOR APPLICATION NUMBER: PCT/JP02/05294
;   PRIOR FILING DATE: 2001-05-30
;   PRIOR APPLICATION NUMBER: JP 2001-162775
;   PRIOR FILING DATE: 2001-05-30
;   PRIOR APPLICATION NUMBER: JP 2001-255226
;   PRIOR FILING DATE: 2001-08-24
;   NUMBER OF SEQ ID NOS: 417
;   SOFTWARE: PatentIn version 3.2
; SEQ ID NO 17
;   LENGTH: 2198
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-478-914-17

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Query Match          41.4%;  Score 2696;  DB 1;  Length 2198;
Best Local Similarity 42.8%;  Pred. No. 1.1e-168;
Matches 643;  Conservative 0;  Mismatches 351;  Indels 510;
Gaps 93;

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Qy          1  GAATTCC----CTGAGGAGGCGAAT-----CCGG-----CGGGTATCAGAGCCA-
TCAG 44

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Db 21 | | | | | | | | | | | | | | | |  
 GTTTTCCAGCACGGAAAAGTCGAGATAATTGCCAATGATCAGGGAAACCGAACCACTCCA 80

Qy 45 AAC-----CGCC-----ACCATGA-----CGGTGG-----  
 GCAAGAGCAGCAAGA 79  
 | | | | | | | | | | | | | | | |

Db 81 AGCTATGTCGCCTTTACGGACACTGAACGGTTGATCGGTGATGCCGCAA-  
 AGAATCAAGT 139

Qy 80 TGC--TG-----CAGCA----TATTGATTACAG-----  
 GATGAGGTGC-----111  
 | | | | | | | | | | | | | | | |

Db 140  
 TGCAATGAACCCACCAACACAGTTTTTGTATGCCAAACGTCTGATTGGACGCAGATTGA 199

Qy 112 --ATCCTGCAGGACGGCCGGATCT---TCATTGGCACCTTCAAG-----  
 GCTTTTG 157  
 | | | | | | | | | | | | | | | |

Db 200 TGATGCTGTTGTCCAGTCTGATATGAAACATTGGC-  
 CCTTTATGGTGGTGAATGATGCTG 258

Qy 158 ACAAGCACATGAATTTGATCCTCTGTG---  
 ACTGTGATGAGTTCAGAAAGATCAAGCCAA 214  
 | | | | | | | | | | | | | | | |

Db 259 GCAGGCCCA-----  
 AGGTCCAAGTAGAATACAAGGGAGAGACCAAAAGCTTCTATCCAG 312

Qy 215 AGAA-----CTCCAA-----ACAAGCAGAAAGGGAAG---  
 AGAAGCGAGTCCTCG-- 256  
 | | | | | | | | | | | | | | | |

Db 313 AGGAGGTGTCTTCTATGGTTCTGACAAAGATGAAGGAAATTGCAGAAGC-  
 CTACCTTGGG 371

Qy 257 --GTCTGGTGTCTGCTGCGAGGGGAGAATCTGGTCTCAATGACAG-----  
 TAGAGGGAC-C 308  
 | | | | | | | | | | | | | | | |

Db 372 AAGACTGTTACCAATGC-----  
 TGTGGTCACAGTGCCAGCTTACTTTAATGACTC 421

Qy 309 TC-----CTCCAAAGATACTGG---TATTGC-----  
 TCGAGTT-- 339  
 | | | | | | | | | | | | | | | |

Db 422  
 TCAGCGTCAGGCTACCAAAGATGCTGGAACCTATTGCTGGTCTCAATGTACTTAGAATTAT 481

Qy 340 -----CCTTGTCTGGAGC---  
 TGCCGGGGGGCCAGGGATCGGCAGGGCTGCTGGCAG 389  
 | | | | | | | | | | | | | | | |

Db 482 TAATGAGCCAACTGCTGCTGCTATTGCTTACGGCTTAG---ACAAAAAGGTTG-  
 GAGCAG 537

Qy 390 AGGAATCCCAGCTGGGGTTCCCATGCCCCAGGCTCCTGCAGGAC--  
 TTGCTGGGCCAGTC 447  
 | | | | | | | | | | | | | | | |

||  
 Db 538 AAAGAAACGTGCT----CATCTTTGACCTGGGAGGTGGC---  
 ACTTTTGATGTGTCAATC 590

Qy 448 C-----GTGGGGTTGGC-----GGGCCATCCCAACAGGTGATGAC-CCCAC-  
 AAGGA 492  
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||  
 Db 591  
 CTCACTATTGAGGATGGAATCTTTGAGGTCAAGTCTACAGCTGGAGACACCCACTTGGGT 650

Qy 493 AGAGGTACTGTTG-CAGCCGCTGCAGCTGCTGCCACAGCCA--  
 GTATTGCCGGG-----G 544  
 | | | | | | | | | | | | | | | | | | | | | |

|  
 Db 651 GGAGAAGATTTTGACAACCG-----AATGGT-----  
 CAACCATTTTATTGCTGAGTTTAAG 701

Qy 545 CTCCAACC-----CAGTACCCACCTG---GCCGTGGGGGTCTCTCC--  
 CCCACC 587  
 | | | | | | | | | | | | | | | | | | | | | |

|  
 Db 702  
 CGCAAGCATAAGAAGGACATCAGTGAGAACAAGAGAGCTGTAAGACGCCTCCGTACTGCT 761

Qy 588 TATGGGC---CGAGGAGCACCCCCT-----  
 CCAGGC----- 615  
 | | | | | | | | | | | | | | | | | | | | | |

Db 762  
 TGTGAACGTGCTAAGCGTACCCTCTCTTCCAGCACCCAGGCCAGTATTGAGATCGATTCT 821

Qy 616 ----ATGATGGG-----CCCACCT-----  
 CCTGGTATGA----- 640  
 | | | | | | | | | | | | | | | | | | | | | |

Db 822  
 CTCTATGAAGGAATCGACTTCTATACCTCCATTACCCGTGCCCGATTGGAAGAACTGAAT 881

Qy 641 ---GACC--TCCTATGGGTCC-----  
 CCCAATGGGGATCCCCCTGGAAGAGGGACTCCA 690  
 | | | | | | | | | | | | | | | | | | | | | |

|||  
 Db 882 GCTGACCTGTTCCGTGGCACCCTGGACCCAGTAGAGAAAGCCCTTCGA-----  
 GATGCCA 936

Qy 691 A--TGGGCATGCCCC-----TCCGGAATGCGG-CCTCCTC----  
 CCCCT 729  
 | | | | | | | | | | | | | | | | | | | | | |

||||  
 Db 937  
 AACTAGACAAGTCACAGATTCATGATATTGTCCTGGTTGGTGGTTCTACTCGTATCCCCA 996

Qy 730 GGGATGCGAGGCCT-TCTTTGAC-----CCTTGGC----CACAGAGTATG-  
 GAAGTAGCT 778  
 | | | | | | | | | | | | | | | | | | | | | |

|  
 Db 997  
 AGATTTCAGAAGCTTCTCCAAGACTTCTTCAATGGAAAAGAACTGAATAAGAGCATCAACC 1056

Qy 779 CCGCAGAGGCGTGGGCT--CGATTG--CT---CAGG--GCCA-  
 CGTTACCACAGACCTGT 828



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      | | | | | | | | | | | | | | | |
||
Db      1057
CTGATGAAGCTGTTGCTTATGGTGCAGCTGTCCAGGCAGCCATCTTGTCTGGAGACAAGT 1116

Qy      829 TTGT-----TTCTTATGCTGTTGTTTCGTGGA-----
GTCTCATGGGATTGT-- 869
      | | | | | | | | | | | | | | | |
Db      1117
CTGAGAATGTTCAAGATTTGCTGCTCTTGGATGTCACTCCTCTTTCCCTTGGTATTGAAA 1176

Qy      870 ---CTGGT-----TTC---
CCTTACAG- 885
      | | | | | | | | | | | | | | | |
|||
Db      1177
CTGCTGGTGGAGTCATGACTGTCCTCATCAAGCGTAATACCACCATTCTACCAAGCAGA 1236

Qy      886 ----GGCC--CCCTCCC-----CCGGAATGCGCCCACC-----
AAG 916
      | | | | | | | | | | | | | | | |
|||
Db      1237
CACAGACCTTCACTACCTATTCTGACAACCAGCCTGGTGTGCTTATTCAGGTTTATGAAG 1296

Qy      917 GC-----CCTAGACT-----CATCTTGGC-----CCTCCTCAGC-
TCC 948
      | | | | | | | | | | | | | | | |
|
Db      1297
GCGAGCGTGCCATGACAAAGGATAACAACCTGCTTGGCAAGTTTGAAGTCACAGGCATAC 1356

Qy      949 CTGCCTGTTTCCCGTAAGGCTGTACAT-----AGTC-
CTTTTATCTCCTTGTGGCCT 999
      | | | | | | | | | | | | | | | |
|||
Db      1357 CT-CCTGCACCCCG--AGG-TGTTTCCTCAGATTGAAGTCACTTTTG--
ACATTGATGCCA 1410

Qy      1000 ATGAAA-----CTGGTTTATAATAAACTC----TTAAGAGAAC---
ATTATAA 1040
      | | | | | | | | | | | | | | | |
|
Db      1411
ATGGTATACTCAATGTCTCTGCTGTGGACAAGAGTACGGGAAAAGAGAACAAGATTACTA 1470

Qy      1041 TTGC 1044
      | |
Db      1471 TCAC 1474

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RESULT 9

US-10-478-914-20

; Sequence 20, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 20  
; LENGTH: 2495  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-20

Query Match 40.4%; Score 2635; DB 1; Length 2495;  
Best Local Similarity 36.6%; Pred. No. 5.5e-164;  
Matches 683; Conservative 0; Mismatches 322; Indels 862;  
Gaps 103;

Qy 2 AATTCCCTGAGGAGGCGAATCCGGC-----GGGTA--  
TCAGAGCCATCA 43  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 280 ATTACCATGATGAATC--  
ATCCAAGTGCCTGGAAAGAAGGGCAATTCAAAGATATCA 337

Qy 44 GAACC-----GCCACCATG--  
ACGGTGGGCAAGAGCAGCAAGATGCTGC----- 85  
| | | | | | | | | | | | | | | | | | | | | |  
Db 338  
TTACCAAGGTTGCCAATGTGGAAGTATACTACAGAGCAATACAGTTCTACTTAGAATTCA 397

Qy 86 AGC--ATATTGATTACAG----GATGA-  
GGTGCATCCTGCAGGACGGCCGGATCTTCATT 138  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 398 AGCCTCTGTTGTTAAATGATTTGCTGATGGTGTCTCTCC---ACGGTTGGATC-  
ACACT 453

Qy 139 GGCACCTTCAAGGCTTTTGACAAG-----CAC-----  
ATGAATTT---- 173  
| | | | | | | | | | | | | | | | | | | | | |  
Db 454  
CGTGCAGTCAATTATTTTCAGCAAGGTTAAACAGCTACCACTGGTGAAACCGTATTTGCGT 513

Qy 174 -----GATCC-----TCTGTGACTG-----TGA-----  
TGAGTTCA 199  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 514  
TCAGTTCAGAACCATAACAACAAATCTGTGAATGAATCATTGAACAATCTTTTTATTACA 573

Qy 200 GA--AAG---ATCAAGC-CAAAGAACTCCAA-----  
ACAA---- 228  
| | | | | | | | | | | | | | | | | | | | | |  
Db 574  
GAAGAAGATTATCAGGCTCTGCGAACATCAATAGATGCTTATGACAACCTTTGACAATATC 633

Qy 229 -----GCAGAAAGGGAAGAGAAGCGAGTCCTC-----GGTCTGGTGC--

TGCTGC---- 271  
 Db 634  
 TCGCTTGCTCAGCGTTTGGAAAAACATGAACTCATTGAGTTCAGGAGAATTGCTGCTTAT 693  
 Qy 272 -----GAGGGGAGAAT--CTGGTCTCAATG-----ACAGT---  
 AGAGGGACCTCCT- 312  
 ||| | ||| |||| || | | || ||| |||  
 |||  
 Db 694  
 CTCTTCAAAGGCAACAATCGCTGGAAACAGAGTGTAGAGCTGTGCAAGAAAGACAGCCTT 753  
 Qy 313 -----  
 CCCAAAGATACTGGTATTGCTCGAGTTCCA 342  
 | ||||| ||| |  
 Db 754  
 TACAAGGATGCAATGCAGTATGCTTCTGAATCTAAAGATACTGAATTGGCTGAAGAACTC 813  
 Qy 343 CT-----TGC--TGGAGC-----  
 TGCCGGG 360  
 || ||| ||||| | ||  
 |  
 Db 814  
 CTGCAGTGGTTTTTGCAGGAAGAAAAAAGAGAGTGCTTTGGAGCTTGTCTGTTTACCTGT 873  
 Qy 361 GGC-----CCAGGGATCGGCAGGG---CTGC-  
 TGGCAGAGGAATCCCAGCTGG 404  
 | |||| ||| | | |||| || | ||| ||  
 |||  
 Db 874 TACGATCTTTTAAGGCCAGATGTCGTCCTAGAAACTGCATGGAGGCACAATATCA--  
 TGG 931  
 Qy 405 GGTT-  
 CCATGCCCCAGGCTCCTGCAGGACTTGCTGGGCCAGTCCGTGGGGTTGGCGG-- 461  
 || ||||| || | ||| || | || || || ||  
 Db 932 ATTTTGCCATGCCCTA-TTTCATCCAGGTCATGAAGG---  
 AGTACTTGACAAAGGTGGAT 987  
 Qy 462 -----GC-----CATCCC----AACAGGTGATGACC---  
 CCACAAGGAAGAGGTAC 500  
 || ||| | || || || || | ||| ||  
 |  
 Db 988  
 AAATTAGATGCTTCAGAATCACTGAGAAAAGAAGAACAAGCTACAGAGACACAACCC 1047  
 Qy 501 --TGTT-----GCAGCCGCTGCAGCTGCTGCCA-CAG---  
 CCAGTATTGCCGGGGCTCCA 549  
 |||| |||| | | |||| || ||| |||| |||| |  
 ||  
 Db 1048 ATTGTTTATGGTCAGCCCCAGTTGATGCTGACAGCAGGACCCAGTGTGTC---  
 GTCCCT 1104  
 Qy 550 ACCCAGTACCCACCTGGCCGTGGGGGTCTCCCCCACC-  
 TATGGGCCGAGGAGCACCCC 608  
 |||| || ||| || | | |||| |||| | | ||  
 |  
 Db 1105 CCCCAGGCACCTTTTGGTTATGGTTATACCGCACCACCGTATGGACAG-----  
 CCACA 1157  
 Qy 609 TCCAGGCAT-----GATG-GGCCCACCTCCTG-----

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GT 636
|| ||| |
||
Db 1158
GCCTGGCTTTGGGTACAGCATGTGAGATGAAGCGCTGATCCTGTAGTCACCTATTTTCGT 1217

Qy 637 A-TGAGACCTC--CTATGGGTCCCC--
AATGGGG----- 666
| ||| || || || | ||| |
Db 1218 ACTGAAACATCGTCTTT---
ACCCACTTCTCAGTTTATAATGGGGGAAAACAGGCAACGT 1274

Qy 667 -----ATCCCC-----CCTGGAAGA-----
GGGAC 686
| || | ||| ||| |||
|
Db 1275
GTTCTTGTAACCTTTATTTTCATGAAGGACTTCTTTTTGTTTCTAACTATAAACTTGGATC 1334

Qy 687 TCCAATGG-----GCATGCCCCCTCC-----
GGGA 711
|| ||| ||| ||| |||
||||
Db 1335
ACCTATGTTAAAAACCTTATTTTCACATTCCACATCATTTTAGAATTTATTTTCGAAGGGGA 1394

Qy 712 AT-----GC---GGC-----CTCCTCCCCCT-----
GGGAT 734
|| | ||| || ||||| |
|
Db 1395
ATAGTTTCAATGTTTATTTCACTTGGGCTTTTTTTCTTCCCCCTCTTTCTTTAAAGAACT 1454

Qy 735 GC-----GAGG--CCTTCTTTGACC-----
CT 754
|| ||| ||| ||| |
|
Db 1455
GCTCAATATTCAATCTGTTGTGAAGAACCTGATTTGCACTCTGTAGTGTTTAAAGAAACA 1514

Qy 755 TGGCCAC-----
AGAGTATGGAAGTAGCTCCGCAGAGGCGT 790
| || || |||| || ||| |||
|||
Db 1515 AAGAACTCTAATATTGAATCTCTTAAATTTAGTGTATGTAAACAGCT-
TACAAATACGT 1573

Qy 791 G--GGCTCGATTC-----
CTCAGGG 808
| || ||| |
||
Db 1574
ATTGCTCAAATGCATTTAAATCTGTTTTATTCAAAGAAAAGCTAAAGCAAAAACACTGG- 1632

Qy 809 CCACGTTACCA--CAGACCTGTTTGTCT-----
TATGCTGTTGTTTCGTGG 853
|| | |||| || |||| || | |||
Db 1633 -
CATATGACCATGCAAGACTGTGTCAGTGCCAAACAAAGACAACACTAATCAGCACATCGT-- 1689

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Qy 236 GGGAAG--AGAAGCGAGTCCTCGGTC-----  
TGGTGCTGCTGCGAGGGGAGAATCTGG-- 286  
| | | | | | | | | | | | | | | | | | | | | |

Db 390  
GGTTATCCATTAGCTAAACCGCCTTCCTTAATAGCTTTACACTGTTTGCTTTCTCTGGAA 449

Qy 287 -----TCTCAATGACAGTAGAGGGACCTCCTCCCA----  
AAGATACTG 325  
| | | | | | | | | | | | | | | | | | | | | |

Db 450 CATTITTTAGTTAAATTTTATAATG-CAGTTG-----  
CACACAAATGAAGACACAG 499

Qy 326 GTATTGCT-----CG--AGTTCCAC----TTGCTGG-  
AGCTGCCGGGGGGCCAGGA 370  
| | | | | | | | | | | | | | | | | | | | | |

Db 500 --ATGGCTGCATCCTCCGTCTCTTCCCCTCGTTTACAGGAAGCTGC----  
GGATCAGGA 553

Qy 371 TCGG---CAGGGCTGCT-----GGCAGAGGAATCCCAGCTGGGGTTCCCA-  
TGC 415  
| | | | | | | | | | | | | | | | | | | | | |

Db 554 GGGGTGTTAGGGTTACCCACATGGTAAGGGCAGAG-----  
ACAAGAGGGGACCCAGTTT 608

Qy 416 CCCAGGCTCCTGCAGGAC-  
TTGCTGGGCCAGTCCGTGGGGTTGGCGGGCCATCCCAACAG 474  
| | | | | | | | | | | | | | | | | | | | | |

Db 609 TCCATGCTGCACATGGTCATTGCTGGG---GAC--  
TGAGGTTTGCACATACCCTGCCCT 663

Qy 475 GTGATGACCCACACAAGGAAGAGGTAC-----TGTTGC-  
AGCCGCTGCAGCTGCTGCCACA 528  
| | | | | | | | | | | | | | | | | | | | | |

Db 664  
GTTCTCCCTCCGCTGGGGAGAAAGTCAGGGATGGAGCAAGCTGCAGCATCTTCTGAAAAA 723

Qy 529 GCCA-----GTATTG---  
CCGGGGCTCCAACCCAGTACCCACCTGGCCGTGGGGGTCTCTC 580  
| | | | | | | | | | | | | | | | | | | | | |

Db 724 GAAAAGGTGGCCTTGTCTCCAGGTCTCCCCTCAAGT-CCCACCTTCCCAT-  
AGTTTTCTG 781

Qy 581 CCCACCTATGGG----CCGAGGAGCAC--CCCCTCCAGGCATGATGGGC-----  
CCA 627  
| | | | | | | | | | | | | | | | | | | | | |

Db 782 CCACTTCTCTTGATTTTCC-----TCTCTGCCACTTCT--  
CTTGATTTTCTCTCTGCCA 834

Qy 628 C--CTCCTGGTATGAGACCTC-----CTATGGG-----  
TCCCCCAATGGGGA 667  
| | | | | | | | | | | | | | | | | | | | | |

Db 835 CTTCTCTTGATTT---  
TCCTCTCTGCAGCTGCTTTGAGGTGGGTTTTCTCCAGATGCACA 891

Qy 668 ---TCCCC-----CCTGGAAGAGGGAC--  
 TCCAATGGGCAT----- 698  
 |||| | | | | | | | | | |  
 Db 892  
 CTTTCCCCTGCTTTGCGTCCTTATTCTGGTAGAAGCACAAATCTAAAGCTCATTAAAGGGAA 951  
 Qy 699 ---GCCCCCTCCGGAATGCGGC---CTC-----CTCC-CCCTGGGA-----  
 TGC 736  
 | | | | | | | | | | | | | |  
 ||  
 Db 952  
 CTAATCAATTCTGTGCATGGCGCTAGCTCAGCAGATCACCACACAGGCAGCACTATTAGC 1011  
 Qy 737 GAGGCCTTCTTTGACCCTTGGCC--ACAGAGTATGGAAGTAGCTCC---GCAG----  
 AGG 787  
 | | | | | | | | | | | | | | | |  
 |||  
 Db 1012  
 AAGTCGGTGCTTAACACATGGCACTTCCATGAATCGATATGGAGCCCGTGTAGAACAAGG 1071  
 Qy 788 CGTGGG-----CTCGATTCC---TCAGGGCCAC-GTTACCA-----  
 CAGA--- 823  
 | | | | | | | | | | | | | | | |  
 Db 1072  
 CATGGGTTTTTTTCTCTTCCCATTAAAGAAAAGTATGCCAAAATAACTTCTCAGATAT 1131  
 Qy 824 -----CCTGTTTGTT-----  
 CTTATG- 840  
 | | | | | | | | | |  
 |  
 Db 1132  
 TTTCAAGTATGACTTTTATGAAGGGAAAAAGCATTTTTGTTTGCAAATCATGCTTCAGT 1191  
 Qy 841 -----CTGTTGT---TCGTGGAG-----TCTCATGGGATTGT--CT-----  
 GGTT 875  
 | | | | | | | | | | | | | | | |  
 ||||  
 Db 1192  
 GCAGGCCAGTTGTGAATTGTGATGGCTTTTATTTCTCCTGGGGCTGTAACTTTAAGGGTT 1251  
 Qy 876 T-----CC---CTTA-  
 CAGGGCCCCCTCCCCGGAATGCGCCACCA 914  
 | | | | | | | | | | | | | | | |  
 Db 1252 TAGAATTTGGAACCACAGCCTAGCTAATCATGACACACACAC-----  
 ACACACACAC 1305  
 Qy 915 AGGCCCT---AGACTCAT---CTTGGCCCTCCTCAGCTCCCTGC-----  
 CTGT 956  
 | | | | | | | | | | | | | | | |  
 |  
 Db 1306  
 ATGCACACACATACACATACACAAAGCATCACGAAGAACCATACAAATTGTACATTATTT 1365  
 Qy 957 TTCCCGT-AAGGCT-----GTACATAG--TCC-----TTTTATCT---  
 CCTTGTGGC 997  
 | | | | | | | | | | | | | | | |  
 Db 1366  
 TACACATGGAGGCTCACTCTAAAATAGATAACCATTTTAAATATTAATAAACTTGTGCT 1425  
 Qy 998 CTATGAA-----ACTGGTTTATAATAAAC---



TCTTAAGAGAACATTAT 1038  
| | | | | | | | | | | | | | | |  
Db 1426  
CATTGTATGTTTCATTCTATATGTACTGATTTGTTATTTCACATTTCTTTCAAATCGTTCA 1485

Qy 1039 AATTGC 1044  
| | | | |  
Db 1486 AATTTC 1491

RESULT 11  
US-10-478-914-20/c  
; Sequence 20, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 20  
; LENGTH: 2495  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-20

Query Match 39.2%; Score 2555.5; DB 1; Length 2495;  
Best Local Similarity 37.3%; Pred. No. 2.3e-158;  
Matches 665; Conservative 0; Mismatches 370; Indels 749;  
Gaps 102;

Qy 1 GAATTCCTG-----AGGAGGC-----GAATCCGGCGGG-  
TATCA 34  
| | | | | | | | | | | | | | | |  
| |  
Db 1791  
GGGAAACCTGCATAGGTTAGAGGGCCTTTTACGCTCATTTAAAAATCAGGCAAGTTGTCT 1732

Qy 35 GAGCCAT-----CAGAACCGCCACCATG---  
ACGGTG----- 63  
| | | | | | | | | | | | | | | |  
Db 1731  
GTAACATTTTCAATAATCTGGGAAGCACTGCAATCCAGTGTACGATGTGCTGATTAGTG 1672

Qy 64 -----GGCAAGAGCA-----GCAAG-----ATGC-----TGC---  
AGCAT 90  
| | | | | | | | | | | | | | | |  
|  
Db 1671  
TTGTCTTTGTTGGCACTGACAGTCTTGCAATGATGCCAGTGTGCTTTAGCTT 1612

Qy 91 ---ATTGATT---ACAGGATGAGGTGCATCCTG-CAGGACG-----

GCCG----- 128  
 |||| | |||| | | |||| | || ||| || |  
 Db 1611  
 TTCTTTGAATAAAACAGATTTAAATGCATTTAGACAATACGTATTTGTAAGCTGTTTACA 1552  
 Qy 129 -----GATCTTCATTG-----  
 GCAC----- 143  
 || ||| ||| |||  
 Db 1551  
 TACACTAAATTTAAGAGATTCAATATTAGAGTTTCTTTGTTTCTTTAAACACTACAGAGT 1492  
 Qy 144 -----CTTCAAGGC-----  
 TTTTG----- 157  
 |||| | | |||  
 Db 1491  
 GCAATCAGGTTCTTCACAACAGATTGAATATTGAGCAGTTCTTTAAAGAAAGAGGGGGA 1432  
 Qy 158 -----ACAAGCACA--TGAAT-----TTGA-----TCCTCTGTGA-----  
 CT-- 187  
 | |||| || |||| |||| ||| || || || ||  
 Db 1431  
 AGAAAAAAGCCCCAAGTGAATAAAACATTGAAACTATTCCCCTTCGAAAATAAATTCTAA 1372  
 Qy 188 -GTGATGAGTTCAGAAAGATCAAG-----CCAAAGAACTCCAA-----  
 ACAAGC 230  
 |||| | | | || | | | |||| | ||  
 |  
 Db 1371  
 AATGATGTGGAATGTGAAATAAGGTTTTAACATAGGTGATCCAAGTTTATAGTTAGAAAC 1312  
 Qy 231 AGAAAGG-----GAAGAGAAG----CGAGTCCTCG--  
 GTCTGGT----- 263  
 | |||| ||| ||| | || | || | ||| |  
 Db 1311  
 AAAAGAAGTCCTTCATGAAATAAAGGTTACAAGAACACGTTGCCTGTTTTCCCCCATT 1252  
 Qy 264 ---GCTGCTGCGAGGGGAGAATC-TGGTCTCAAT--GACAGTAG-----  
 AGGGAC-- 307  
 ||| | ||| | | | || ||| | || | ||| ||| |  
 Db 1251  
 TAAACTGAGAAGTGGGTAAAGACGATGTTTCAGTACGAAAATAGGTGACTACAGGATCAG 1192  
 Qy 308 -----CTC-----CT---CCCAAAGATACTGG-  
 TATTGCTCGAGTTCCACTTGCTGG 350  
 ||| || ||||| | || | ||| |||| |  
 |||  
 Db 1191 CGCTTCATCTCACATGCTGTACCCAAAG--CCAGGCTGTGGCT----  
 GTCCATACGGTGG 1138  
 Qy 351 AGCTG-----CC---GGGGGCCCAGGGA---TCGGCA-----GGG--  
 CTGCTGG 386  
 || | || ||| |||| |||| |||  
 |||||  
 Db 1137  
 TGCGGTATAACCATAACCAAAAGGTGCCTGGGGAGGGACGGCAACACTGGGTCCTGCTGT 1078  
 Qy 387 CAGAG-----  
 GAATCCCAG----- 400  
 ||| | ||| |  
 Db 1077



Qy 703 CCTCCGGAATGC-GGCCTCCTC-----CC--  
CCTGGGATGCGAGGCCTTCTTTGA 750  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 477  
CTTGCTGAAATAATTGACTGCACGAGTGTGATCCAACCGTGGAGACAGCACCATCAGCAA 418

Qy 751 --CCCTTGGCCACAGAGTATGGAAGTAGCTCCGCAGAGGCGTG-GGCTC-----  
GAT 799  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 417 ATCATTTAACAACAGAGGCTTGAATT--  
CTAAGTAGAACTGTATTGCTCTGTAGTATAGT 360

Qy 800 TCCTCA-GGGCCACGTTACCACAGACCTGTTTGT-----TTCTT---  
ATGCTGTTGTT 848  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 359  
TCCACATTGGCAACCTTGGTAATGATATCTTTGAATTGCCCTTCTTTCCAGGCATCAGTT 300

Qy 849 CGTGGAGTC-TCATGGG-----ATTGTCTGGTT-----TCC----  
CTTACAGGGCC 889  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 299  
GGATGATTTCATCATGGTAATTATGGCATTATCATATTCTTCATACTTGTGCATACAAAAAC 240

Qy 890 CCC---TCC-CCCGGGAATGCGC-----C--CACCAAGGCCCTAG-----  
ACTCATC 930  
| | | | | | | | | | | | | | | | | | | | | |  
Db 239  
ACCAGTTCTGCCCAAAGATGAGCTTGTTCTGCAGCTCTTAGCACCTTGGGAATATTCACT 180

Qy 931 TTGGCCCTCCTCAGCTCC-----CTGCCTGTTTCCCGTAAGGCT-----  
GTACA- 974  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 179 CTAGACCAGAACAGCTCCAGGTGCTCCCTCATTTTC-  
TGAGGCTTAAATTTAGAGTATAG 121

Qy 975 -----TAGTCCTTTTATCT---CCTTGTGG-----  
CCTATGAACT---G 1008  
| | | | | | | | | | | | | | | | | | | | | |  
Db 120  
AATAGCTAATTCAGTAAACATTCCCATGTGAGCTCGCTCAAGTCCCAGTGCTGCTTCCAA 61

Qy 1009 GTTTATAATAAACTCTTAAGA-----GAACATTATAATTGC 1044  
| | | | | | | | | | | | | | | | | | | | | |  
Db 60 CATGGTGATCAGCTCTTCAAATAGCCACGATCCTGATAGTAGC 17

RESULT 12

US-10-478-914-57/c

; Sequence 57, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 57  
; LENGTH: 2336  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-57

Query Match 38.4%; Score 2502; DB 1; Length 2336;  
Best Local Similarity 36.2%; Pred. No. 8.7e-155;  
Matches 626; Conservative 0; Mismatches 366; Indels 736;  
Gaps 95;

Qy 3 ATTCCCTGAGGAGGCGAATCCGGCGGGTATC-----AGAGCCATC-----  
AGAAC----- 47  
| | | | | | | | | | | | | | | | | |  
Db 1689  
AACCCATGAAGGGAAAAATCCTCTTTTTTCCCCCAAGTGCATTCTACTTATTACTTTGC 1630

Qy 48 -----CGCC-----ACCATGACGGTG----GGCAAGAGCAGCAAG-----ATGC--  
TGC 85  
| | | | | | | | | | | | | | | | | |  
| | |  
Db 1629  
ATTTTTCTCCCAAAGTCCAAATTTATGCAAAGAAAATAGAAACAAGTTCAAATGCAATGC 1570

Qy 86 -----AGCATATTGATTACAGGATGAGGTGCATCCT--GC-----  
AGGA 122  
| | | | | | | | | | | | | | | | | |  
Db 1569  
ATTAACCAAATAAAACAAGTCTCCTTCAAATTAGGAACCAACCTAAGCATTTGTAAAGTG 1510

Qy 123 CGGCCGGATC----TTC-----ATTGGCACC-----  
TTCAAGG- 151  
| | | | | | | | | | | | | | | | | |  
Db 1509  
TAGCAGAATCAGAATTCTTTTAAAAATTAGATTTGGAACCTGAACCTATATAATTCATAAT 1450

Qy 152 -----CTTTTGACAAGCACATGAATTTGATCCTCTGTGACTGTGATGA-  
GTTCA- 199  
| | | | | | | | | | | | | | | | | |  
| |  
Db 1449  
TCTCATTTTTCTGTGGAAAATTATTTTATCTTTCTCCTGTATACCTGAAAAAATGTCCAT 1390

Qy 200 -----GAAAGATCAAGCCAAAGAACTCCAAACA---AGCAG--  
AAAGGGAAGAGAAGCG 248  
| | | | | | | | | | | | | | | | | |  
|  
Db 1389  
AGGCTTAAAGGGTCATGCTTTTACATTCTTCCATATCACAGGTACTATGAAGTAAGGAG 1330

Qy 249 A-----GTC-----  
 CTCGGT----- 258  
 | | | |  
 Db 1329  
 ACTTTTAGGTTTCTTTTGTCTTAAACTCAGACAGCTTTGTAAGCAGTAGTGTGTAGATT 1270  
  
 Qy 259 -----CTGGTGCTGCTGCGA-----  
 GGGGAGAATCTGG---- 286  
 | | | | | | | | | | | |  
 Db 1269  
 ACAAGAGTTAGACAAAAGCAGGCGCGACTGAGAAGAGTTGGTGGGGGAGAAGCTTGGGGC 1210  
  
 Qy 287 -----TCTCA---ATGACAG-----TAGAGG-----  
 ACCT 309  
 | | | | | | | | | |  
 | |  
 Db 1209  
 ACTTCCTGTCACTCAACACATTCCAGATCACTAAAAAATTTCCACACCCTCTGCATTCCC 1150  
  
 Qy 310 CCT--CCCA---  
 AAGATACTGGTATTGCTCGAGTTCCA----- 342  
 | | | | | | | | | | | | | | | |  
 Db 1149 CTTGCCCCACTCCAGTTCCCGGTATT-  
 TTCTGATTCCATATGTTGTGGTATTTACCATAC 1091  
  
 Qy 343 -----CTTGCTGGA--GCTGCCGGGGG-----  
 CCCAGGGATCG 373  
 | | | | | | | | | | | | | | | |  
 |  
 Db 1090  
 TTCTCTCCCTCACTAGGCTCTGGCAAGACTGCTTCAGAGGGGATGCATTCTTTAGATTG 1031  
  
 Qy 374 -----GCAGGGCT-----GCTGGCAG---AGGAATC-----  
 CCAGCTG 403  
 | | | | | | | | | | | | | | | |  
 Db 1030  
 CACAAAGCGGAGCTGGGAAAATGGCTGGCAGTTTCAGAATCTAGTCACGATCGCACGCAT 971  
  
 Qy 404 GGGTTCC-CATGCC-  
 CCAGGCTCCTGCAGGACTTGCTGGGCCAGTCCGTGGGGTTGGCGG 461  
 | | | | | | | | | | | | | | | |  
 |  
 Db 970  
 GAGCACCTCACACATCCATGTCCCTACCCGCCCCCCCCGCTCCCGCCCCCTGCAGCTGGCTG 911  
  
 Qy 462 GCC-ATCCCAACAGGTGATGACC-----CCACAAGGAAG---  
 AGGT----- 498  
 | | | | | | | | | | | | | | | |  
 Db 910  
 ACCTGTCTACCCACTGCTGGCCTATCGAACGGCCAGGACTGTCTGGTTTTGGCTCGTGC 851  
  
 Qy 499 -----ACTGT---TGC-  
 AGCCGCTGCAGCTGCTGCCAC 527  
 | | | | | | | | | | | | | | | |  
 |  
 Db 850  
 CTTTGTCCATGTCTGGCTTAGTTCTCTCTGTCTATGCTTGCTCTACCCCCACCGCCCC 791  
  
 Qy 528 AG-----CCAGTATT--GCC-----GGGG-----

CTCCAA 550  
 || | || | ||  
 |||  
 Db 790  
 AGGCGGCACAAGTGTGTTGGCCACACAAAAGTAGAGATAGAAAAGGTGGTAAAACTTCAA 731

Qy 551 CC-----CAGTAC-CCACCTG-----GCCGTGGGGG-----TCCT-----  
 CCCC 583  
 | | | || | | | || | |||  
 ||  
 Db 730  
 ACTTTTCTAAATTCTCCAACAGTTTATTTCTTGTGAATTTCTTCCTTCTTTAAATACTCC 671

Qy 584 C-----ACCTATGGGCCGAG-----  
 GAGCACC----- 605  
 | || | || | ||| |  
 Db 670  
 ATTTTAAGAAAACAAAAAATTAATTATCTAAAGGCAAAGAATGGAAAGCAACCTTTGTG 611

Qy 606 -----CCCTCCAG--GCATGATGGG-----  
 CCCA 627  
 | |||| | || | ||||  
 |  
 Db 610  
 TTCCTTATAAATACTGACTTCATAACTCTCTCCAGCTGCGTTATGGGATGTGTATAAAAA 551

Qy 628 CCTCCTGGTATGAGACCTCCTATGGGTCCC---C--CAATGGG-----  
 GATCCCCCTGG 677  
 || || | |||| | | | | | || | | ||  
 |||  
 Db 550 GCTTCTGTTCTGAGA---  
 ACAAAGGAGCACGTGCAGAAATGAGACGAAAAAATCCACTGA 494

Qy 678 AAGAGGGACTCCA-----ATGGGCATGCCCC-  
 CTCCGGG--- 710  
 || | |||| | | || |||| | ||  
 Db 493 CAGT---  
 ATTCCATTACACAAATTACTTAAAAGATTTTAGTCAAGCCCCTCAACAGATTC 437

Qy 711 -----AATGCGGCCT-----  
 CCTCCC----- 726  
 || || | | || |  
 Db 436  
 AATTTTAAAATGGCTTTTAGTTAAAAAATAATTGAAAGTGCTTACCCAGTAAAAGAA 377

Qy 727 -----CCTGG---GATGCG-AGGCCTTCTTT-----  
 GACCCTTGGCCACAGAGT 766  
 |||| | | || | || || || | || | || ||  
 |  
 Db 376  
 CCGAAGTAGTCCTGAACTGTTACGTAAGACTTTTTACAGTTGGATCTTTGTCAAAGGGG 317

Qy 767 ATGG-----AAGTAGCTCCG-----CAGAGGCGT--GGGCT-  
 CGATTCTCA 805  
 |||| ||| || | || | || | || | || ||  
 Db 316  
 ATGGGGGTGATGGGAGAAAGCAGCAACGACAATCAAAAAGTTCGAGCTGCTGTGGCTAG 257

Qy 806 GGGCCACGTTACCACAG----ACCTGTTT-  
 GTTTCTTATGCTGTTGTTCTGTGA----- 854

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          || ||      || | |      || | | | |||| | |||| | ||||
Db      256 AGGACA---ACTTCTGTGTTTCCAGATAGGATTCT--TGCTGTAG-
AAATGGAACCTCC 204

Qy      855 -----GTCTC-----
ATGGGATTGTCTGGTTTCCC----- 879
          || | |      || | | |||| | | | |

Db      203
AGCCAGCACAGCATCCTGTCCCAGTAGAGAAATGAGTTTGTCTAGTTAAAACAAAAA 144

Qy      880 -----TTACAGGGCCCC---
CTCCCCCGGGAATGCGCCACCAAGGCCCTAGACTCATCT 931
          || | | || | | | | | | | | | | | | | | | | | | |

||
Db      143 ATTAGATACTGGAACCCAGGCTAGACGAGGTATTGAACCGC----GCC--AGA-
TTTCCT 91

Qy      932 TG--GCCC--TC--
CTCAGCTCCCTGCCTGTTTCCCGTAAGGCTGTACATAGTCCTTTTA 985
          || |||| | | |||| || | | | | | | | | | | | |

|
Db      90 TGCAGCCCTGTCTGCTCAGCTCGC-----ATTCCAGTAGGCC--
AACAGTGCTCGAGGA 39

Qy      986 TCTCCTTGTGGCCTATGAAACTGGTTTATAATAAACTCTTAAGAGAAC 1033
          || | | | | | | | | | | | | | | | | | | | | | |

Db      38 ATTCC--GCAGCTTTTAGAGCAG-----AAGTAACACTTC--CGTAC 1

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# RESULT 13

US-10-478-914-57

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; Sequence 57, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 57
; LENGTH: 2336
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-57

```

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Query Match          38.3%; Score 2498; DB 1; Length 2336;
Best Local Similarity 33.1%; Pred. No. 1.7e-154;
Matches 681; Conservative 0; Mismatches 309; Indels 1070;
Gaps 112;

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Qy      2 AATTCCCTG-----AGGAGGCGAATCCGGCGGGTA--TCAGAGCCATCAG-----
AAC 47

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|  
 Db 171  
 ATTTCTCTACTGGGACAGGATGCTGTGCTGGCTGGAAGTTCCATTTCTACAGCAAGAATC 230  
  
 Qy 48 C-----GCCACCATGACGGTG-----  
 GGCAAGAGCAGCAAGA----- 79  
 |  
 Db 231  
 CTATCTGGAAACACAGAAGTTGTCTCTAGCCACAGCAGCTCGAACTTTTTTGATTGTCTG 290  
  
 Qy 80 -TGCTGCAG-----CATATTGA-----  
 TTACAGGATGAGGTGC 111  
 |  
 Db 291  
 TTGCTGCTTTCTCCCATCACCCCATCCCCTTTTGACAAAGATCCAAGTGTAAAAAGT-C 349  
  
 Qy 112 ATCC-----TGCAGGACGGC--CGGATCTT---C---ATTGGCACCTTCAA-----  
 GG 151  
 |  
 Db 350  
 TTACGTAACAGTTTCAGGACTACTTCGGTTCTTTTACTGGGTAAGCACTTTCAATTTTTTTT 409  
  
 Qy 152 CTTTTGAC---AAGCACA---TGAATTTGATCCT-----  
 CTGTGAC----- 186  
 |  
 Db 410 TTTTAACTAAAAGC-CATTTTAAAATTGAATCTGTTGAGGGGCT-  
 TGACTAAAATCTTT 467  
  
 Qy 187 -----TGTGAT-GAGTTCAGAAA-----  
 GATCAAGC 211  
 |  
 Db 468  
 TAAGTAATTTGTGTAATGGAATACTGTCTAGTGGATTTTTTCGTCTCATTTCTGCACGTGC 527  
  
 Qy 212 -----CAAAGAAC-----TCCAAACAAGCA-----  
 GAAAGGGAA 240  
 |  
 Db 528  
 TCCTTTGTTCTCAGAACAGAAGCTTTTTTATACACATCCCATAACGCAGCTGGAGAGAGTT 587  
  
 Qy 241 GAGAAGCGAGTCCT---CGG---TCTGGTGCTGC-----  
 TGCGAGGGGAGAA- 281  
 |  
 Db 588  
 ATGAAGTCAGTTATTATAAGGAACACAAAGGTTGCTTTCCATTCTTTGCCTTTAGATAAT 647  
  
 Qy 282 -----TCTGGTCTC---AATG-----ACAGTAGAGGGACCTCCTCCC-  
 AAAGAT 321  
 |  
 Db 648  
 TAATTTTTTTGTTTTCTTAAAATGGAGTATTTAAAGAAGGAAGAAATTCACAAGAAATAA 707  
  
 Qy 322 ACTG-----GTATT-----  
 GCTCGAGTT---- 339  
 |

Db 708  
ACTGTTGGAGAATTTAGAAAAAGTTTGAAGTTTTTTACCACCTTTTCTATCTCTAGTTTTGT 767

Qy 340 ----CCACTTGCTGGAGCTGCCGGGGGCCAGGGATCGGCAG-GGC-TGC--  
TGGCAGAG 391  
||| || | | ||| |||| ||| || | | ||| || |  
|||||

Db 768 GTGGCCAAACACTTGTGCCGCTGGGGCGGTGGG---  
GGTAGAGGCAAGCATAGACAGAG 824

Qy 392 -GAATC----CCAG-----CTGGGGTTCCCATGCC----CCAGGC--TCCT-  
GCAGGA 432  
| | | |||| | || | | ||| |||| | |||| | |

Db 825 AGGAACTAAGCCAGACATGGACAAAGG--  
CACGAGCCAAAACAGACAGTCTTGCCCGTT 882

Qy 433 CTTGCTGGGCCAGTCCGTGGGGTTGGCGGGCCATCC--  
CAACAGGTGATGACCC----- 484  
| | | ||||| | |||| | | | | | | | |||| | |

Db 883 C--GATAGGCCAG-  
CAGTGGGTGAGACAGGTCAGCCAGCTGCAGGGGCGGGAGCGGGGGG 939

Qy 485 -C-----ACAAGGA----AGAGGTACTGTTGC-AGC---CGCTGC-  
AGCTGCTGCCA 526  
| ||| ||| ||||| || ||| || || || | || | |||  
|

Db 940  
GCGGGTAGGGACATGGATGTGTGAGGTGCTCATGCGTGCGATCGTGACTAGATTCTGAAA 999

Qy 527 CAGCCAG---TATTGCCGGGGGCTC-----CAACCCA-----  
GTACCCAC--- 562  
| ||||| | || || |||| ||| | | |||| |

Db 1000 CTGCCAGCCATTTTCCC--  
AGCTCCGCTTTGTGCAATCTAAAGGAATGCATCCCCCTCTGA 1057

Qy 563 -----CTGGCC-----GTGGGG-----  
TCCTCCCCCACCTATGG-- 592  
|| ||| ||| ||| || || | || |||||

Db 1058  
AGCAGTCTTGCCAGAGCCTAGTGAGGGAGAGAAGTATGGTAAATACCACAACATATGGAA 1117

Qy 593 -----  
GCCGAGG----- 599  
|| ||||

Db 1118  
TCAGAAAATACCGGGAACCTGGAGTGGGCAAGGGGGAATGCAGAGGGTGTGGAAATTTTTT 1177

Qy 600 -----AGCACCCC-----  
CTCCAGGCATGATGGGC 624  
|| |||| ||||

|

Db 1178  
AGTGATCTGGAATGTGTTGAGTGACAGGAAGTGCCCCAAGCTTCTCC-----C 1225

Qy 625 CCACCTCCTGGTATGAGAC-CTCCT--  
ATGGGTCCCCCAATGGGGATCCCCCTGGAAGA 681  
||||| || | | | | ||| | ||| | | ||| | |

Db 1226  
CCACCAACTCTTCTCAGTCGCGCCTGCTTTTGTCTAACTCTTGTAATCTACAC----- 1278

Qy 682 GGGACTCCAATGGGCATGCC---CCCTCCGGAATGCGGC-----  
 CT 720  
 ||| | | | | | | | | |  
 ||  
 Db 1279 ---ACTACT----  
 GCTTACAAAGCTGTCTGAGTTTAAGACAAAAAGAAACCTAAAAGTCT 1331  
 Qy 721 CCTCCC-----CCTGGGAT-----  
 GCGAGGCCTTCTTTGACCCT 754  
 ||| | ||| || | | | ||| |  
 |||  
 Db 1332 CCTTACTTCATAGTACCTGTGATATGGAAGGAATGTAAAAGCATGACC--  
 CTTTAAGCCT 1389  
 Qy 755 -TGGCCA-----CAGAGTAT---GGAAGTAGC-----  
 TCCGCAGAGGCGTGGG 793  
 ||| || ||| ||| || | ||| ||| ||  
 |  
 Db 1390 ATGGACATTTTTTTCAG-  
 GTATACAGGAGAAAGATAAAATAATTTTCCACAGAAAAATGAG 1448  
 Qy 794 C-----TC-GATTCC-----  
 TCAGGG 808  
 || | ||| || |  
 Db 1449  
 AATTATGAATTATATAGTTCAGGTTCCAAATCTAATTTTTAAAAGAATTCTGATTCTGCT 1508  
 Qy 809 CCACGTTACCAC-----  
 AGACCTGT----- 828  
 ||| ||| | ||| |||  
 Db 1509  
 ACACCTTACAAATGCTTAGGTTGGTTCCTAATTTGAAGGAGACTTGTTTTATTTGGTTAA 1568  
 Qy 829 -----TTGTTTCT-----  
 TATGC----- 841  
 ||||| | |||  
 Db 1569  
 TGCATTGCATTTGAACCTGTTTCTATTTTCTTTGCATAAATTTGGACTTTGGGAGAAAAA 1628  
 Qy 842 TG-----TTGTTCGTGGAG-----TC---  
 TCATGGGA 865  
 || || | ||| | ||  
 |||||  
 Db 1629  
 TGCAAAGTAATAAGTAGAATGCACTTGGGGGAAAAAAGGAGGATTTTCCCTTCATGGGT 1688  
 Qy 866 TTG-----TCTGG-----  
 TTTCCCTTAC----- 883  
 | | ||| | | ||| |||  
 Db 1689  
 TGGAAAGTATTTTAAAGGGTTGTTTTCTTGAAAAACAAGCTCTCTTACTTTCTGCAT 1748  
 Qy 884 -----  
 AGG----- 886  
 |||  
 Db 1749  
 CSTATGCTATAAAGATAACTATGCTATAATAAATGTAAGGTAGAAAACCTTAAAGAGAAAA 1808  
 Qy 887 -----GC-----CCC---  
 CTCCCCC----- 898

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Db          1809      ||      |||      |||| |
TAACAGTGTTCCTAAGTGAAAAGCTACTTAGCATTTTCCCAAACCTCACACATTATCAACAG 1868

Qy          899  -----GGGAATGCGCCCACC-----
AAGGCCCTAGACTCAT----- 929

Db          1869
AAACACTAAAAATTAAGAGAAAAAGCGGCCAACTAATTAAATAGCTAGCCTTATTTTGGGG 1928

Qy          930  -----CTTGG-----
CCCTC----- 939

Db          1929
GTATGGGATAGAAAAATTAAGTGTGAATAAAATGATACTTGGGAATGTTTCTCCCTCGTAC 1988

Qy          940  --C-----TCAGC-----TCCCTGCCTGTTTC-----
CCGT 963

|          |          |||||          |||  ||  ||  ||  ||  ||

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Db          1989
CACAAAGGATGTTAGTGGTCAGCCTACGAGTTAATCCTTCCTAGCATGGCTCTGAGCCTT 2048

Qy          964  AAGGCTGTAC-----ATAGTCCTTT-----
TATCTCCTTGT 994

|  ||  |  |          |  |||||  ||  |||||

Db          2049
CATGCCGAGCAGACGTTATTCACATGACGATTCGAAAAGTCCATTCATATATCTC----- 2103

Qy          995  GGCCTATGAAACTGGTTTATAATA-----AACTCTTAAG---AG---
AACAT 1035

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Db          2104  -GC-----
TACCTGGATTTTGAATAGAAAACCAGACAGCAATTCTTTAGTTCCAGCCACCAT 2157

Qy          1036  T-----ATAATTGC 1044
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Db          2158  TCGCCCCACTGGACAATAGC 2177

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; LENGTH: 1946  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-62

Query Match 38.2%; Score 2489.5; DB 1; Length 1946;  
Best Local Similarity 34.9%; Pred. No. 1.8e-154;  
Matches 643; Conservative 0; Mismatches 377; Indels 823;  
Gaps 99;

Qy 1 GAATTC--CCTGAGGAGGCGAATCCGGCGGGTATCAGAGCCA----  
TCAGAACCGCCAC- 53  
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Db 1827 GAAATCCACCCGTCGCTG-  
GGATCCACAGGGGAGTAACGCCAAAACACGGCACCGCTACT 1769

Qy 54 --CATGACGG---TGGGCAAGAGCAGCAAGATGCT-----  
GCAGCATATTGATTACA 100  
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Db 1768  
GTCTTCGCAGCTTTTAGGATGAGGAGCCTATTTCTCTCCCATCACTGTAAAATAATTTTA 1709

Qy 101 GGATGAGGTGCATCCTGCAGGACG-----GCCGGATCTT-----  
CATTGGCACCTTC 147  
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Db 1708 TG-TATGTTG--TCCAGTAGAACAATGATGTTGAGAGTTCTTTCTACAATTG--  
CCTCA 1654

Qy 148 AAGGCTTT-----TGAC-----  
AAGCACATGAATTTGATCCTCTGTGACTG-- 188  
| |||| | ||| ||| |||| |||| || || ||||  
Db 1653 GAAGCTTTTGTAGTATGTGACATTAGTTTTAAGATCATG----  
TGATACTTAGTTACTGAC 1598

Qy 189 -----  
TGATGAGTTCAGAAAGA----- 205  
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Db 1597  
AAAGTATGAGCAGTATTGATAACACCAGTGGGAAAAATAGATTTGAATTTATTTTGTGCG 1538

Qy 206 -TCAAGCC-----AAAGAACTCCAAA-----CAAGCA-----  
GAAAG-- 236  
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Db 1537  
CTCATGTTTGTAGAAAGTACTATTAATATTTAATTGATGTGGGCTAGAAATTTGAACGAT 1478

Qy 237 ---GGAAGAGAAGCGAGTCCTCGGTCTG-----  
GTGCTGCTGCGAGGGG----- 277  
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Db 1477  
TTTGAAAGAAATGTGAATAACAAATCAGTACATATAGAATGAACATACAATGAGCACAAG 1418

Qy 278 ----AG-----AATCTGGTCTCAATGACAGTAGAGGGA-  
CCTCC----- 311  
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Db 1417 TTTTAGTTAATATTTAAATGGTATCTAT---  
TTTAGAGTGAGCCTCCATGTGTAAAATA 1361

Qy 312 -----  
 TCCCAAAGATACTG----- 325  
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 Db 1360  
 ATGTACAATTTGTATGGTTCTTCGTGATGCTTTGTGTATGTGTATGTGTGTGCATGTGTG 1301  
 Qy 326 -----GTATTGCTCG-----AGTTCCA-----  
 CTTGCTG 349  
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 Db 1300  
 TGTGTGTGTGTGTGTGTGCATGATTAGCTAGGCTGTGGTTCCAAATTCTAAACCCTTAAAG 1241  
 Qy 350 GAGCTGCC---GGGG-----GCC---  
 CAGGGATCGGCAGGGCTGC----- 383  
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 Db 1240  
 TTACAGCCCCAGGAGAAATAAAAGCCATCACAAATTCACAACCTGGCCTGCACTGAAGCATG 1181  
 Qy 384 ---TGGCAGAGGAA-----TCCC-----  
 AGCTGGG-- 405  
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 Db 1180  
 ATTTTGCAAACAAAATGCTTTTTCCCTTCATAAAAGTCATACTTGAAAATATCTGAGAA 1121  
 Qy 406 -----GTT-----  
 CCCATGC-----C 416  
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 Db 1120  
 GTTATTTTTTGGCATCAGTTTTTCTTAATGGGAAGAGAAAAAACCCATGCCTTGTTCTAC 1061  
 Qy 417 CCAGGCTCC-----TGC-----AG---GACTTGC---  
 TGGGCC 443  
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 Db 1060  
 ACGGGCTCCATATCGATTTCATGGAAGTGCCATGTGTTAAGCACCGACTTGCTAATAGTGC 1001  
 Qy 444 AGTCCGTGGGGT----TGGCGGGCCATC-CCA---ACAGG--TGATGA---  
 CCC----- 484  
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 Db 1000  
 TGCCTGTGTGGTGTATCTGCTGAGCTAGCGCCATGCACAGAATTGATTAGTTCCTTAATG 941  
 Qy 485 -----CACAAGGAAGAGGTA-----  
 CTGT 503  
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 Db 940  
 AGCTTTAGATTGTGCTTCTACCAGAATAAGGACGCAAAGCAGGGGAAAGTGTGCATCTGG 881  
 Qy 504 TG-----CAGCCGC--TGCAGCTGCTG-----CCA-----  
 CAGCCAGTATT 537  
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 Db 880  
 AGAAAACCCACCTCAAAGCAGCTGCAGAGAGGAAAATCAAGAGAAGTGGCAGAGAGGAAA 821  
 Qy 538 GCC-----GGGGC-----TCCAACCCAGTACC---  
 CACCT-----G 565

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 Db 820  
 ATCAAGAGAAGTGGCAGAGAGGAAAATCAAGAGAAGTGGCAGAAACTATGGGAAGGTGG 761  
  
 Qy 566 GCCGT---GGGGGTCCT-----CCC--CCACCTAT-----  
 GGGCCGAGG--A 600  
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 Db 760  
 GACTTGAGGGGAGACCTGGAGACAAGGCCACCTTTTCTTTTTCAGAAGATGCTGCAGCTT 701  
  
 Qy 601 GCACC--CCCT-----CCAGGCATGATGGGCCCACCTCCTGGT-  
 ATGAGACCTCCT 648  
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 Db 700  
 GCTCCATCCCTGACTTTCTCCCCAGCGGAGGGAGAACAGGGCAGGGTGATGTGCAAACCT 641  
  
 Qy 649 ATGGGTCCCC--CAATG-----  
 GGGATCCCCCCTGGAAGAGGG 684  
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 Db 640 C--  
 AGTCCCCAGCAATGACCATGTGCAGCATGGAAACTGGGGTCCCCTCTTGTCTCTGC 583  
  
 Qy 685 ACT--CCA-ATGGGCATGC-----CCCCTCCGGGA-ATGCGGCCTCCT---  
 CCCCTGG 731  
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 | |  
 Db 582  
 CTTTACCATGTGGGTAACCCTAACACCCCTCCCTGATCCGCAGCTTCCTGTAAACGAGGG 523  
  
 Qy 732 GATGCGA-----GGCCTTCTTTGAC--  
 CCTTGG----- 757  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 522  
 GAAGAGACGGAGGATGCAGCCATCTGTGTCTTCATTTGTGTGCAACTGCATTATGAAATT 463  
  
 Qy 758 -----CC-----ACAGAG-----TATGGAAG-----  
 TAG 776  
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 Db 462  
 TTAATAAAAATGTTCCAGAGAAAGCAAACAGTGTAAGCTATTAAGGAAGGCGGTTTAG 403  
  
 Qy 777 CT-----  
 CC----- 780  
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 Db 402  
 CTAATGGATAACCGATGACTGATGTGTGTATAAGTGAGAGATGGGGATGGAGATTCTGGG 343  
  
 Qy 781 -----GCAGAGGC---  
 GTGGGCTCGATTTCCTCAGGGCCAC-----G 813  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 342  
 ATGCTGGCGGAGGCTCTGGGAGCGCAGGTAAACAGGCCCAAGAGATGTGGAGAGCAGAGG 283  
  
 Qy 814 TTACCACAGAC-----CTGTTTGTTTCTTATGCTGTTGTTTCG-----TGG---  
 AGT 856

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Db      282
TTGTCACAGACACATGCCATCTGCATAGGGCTCAATCTGCCGT TAGTAATT TGGATAAGT 223

Qy      857 CTCATGGGATT-----GTCTGGT-----TTCC----
CTTACAGGGCC 889

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Db      222
ATCCAAAGTTTACAGAGAAAAGGAAGAAGGCAGAAAAGGAACTACAGAATCAAACAGCTCC 163

Qy      890
CCCTCCCCCGGGAATGCGCCCACCAAGGCCCTAGACTCATCTTG GCCCTCCTCAGCTCCC 949

|| | || |        ||| | || | | || | || | || | || | || |
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Db      162 CCTTTCCTC---TCTGC-CACACTCACACCC CACACAAAAACACCACACA-
CACAC 108

Qy      950 TGCCTGTTTTCCCGTAAGGCTGTACATAGTCCTTTTA-TCTC--CTTGT-
GGCCTATGAAA 1005

|          ||         | | |     |||   | |   |||   |   || ||| |
Db      107 ACAC---
ACACCAGGGGACAATGAGATGTCAGATAAGCCTCAGCCAGTAGGCCAACAGTG 51

Qy      1006 CT---GGTTTATAATAAACTCTTA-AGAGAACATTATAATTGC 1044
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Db      50 CTCGAGGAAT-TCCGCAGCTTTTAGAGCAGAAGTAACACTTCC 9
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CATCAGAAC----- 47  
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 Db 2083 CTAGCGGCCGCGA--CCTGCAG--CTC-  
 GAGCACATGTGGCCTTTTTTTTTTTTTTTTA 2029

Qy 48 ---CGCCACCATG--ACGGTGGGCAAGAGC-----AGCAAGATG-----  
 CT 83  
 | | | | | | | | | | | | | | | | |  
 | |  
 Db 2028  
 TTTTGCCTTCTTGCTCTGGTGGTTAGTCTCCTACTATAAACATGATTTTCCTTCTTCCCT 1969

Qy 84 GCAG-----CATATTGAT-TACAGGA-----  
 TGAGGT 109  
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 Db 1968  
 TCAGAGTCCTGTCAATCTTTACTTTTTTCTCATTAAATATACAGAAGTTATACTACAGAT 1909

Qy 110 GCATCCTG---CAGGACGGC-CGGATCTTCAT---TGGCACCTTCAAGGCTTTTGAC-  
 AA 161  
 | | | | | | | | | | | | | | | | |  
 | |  
 Db 1908 ACATTCAAGCTCATGACTGCTAAAACTTCCTGAAATGAGCCTTAA----  
 TTCATACGAA 1853

Qy 162 GCACATGAATTTGATC-----CTCTGT-GACTGTGAT-  
 GAG 195  
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 | | |  
 Db 1852  
 TCATTTCTATTTGTTCTTTTTTTTTTTGAGACAGACTCTTACTCTGTGCGCCAGGCTGGAG 1793

Qy 196 TTCA---GAAAGATCAAGCCAAAGAACTCCAAAC-AAGCAGAAAGGG--  
 AAGAGAAGCGA 249  
 | | | | | | | | | | | | | | | | |  
 |  
 Db 1792 TGCATGGCATGATCTCGGCT---  
 CACTGCAACCTCTGCCTCACGAGTTAGGTCAAGCAA 1736

Qy 250 GT-----CCTCGGTCT-----GGTGCTG-----  
 CTGC----- 271  
 | | | | | | | | | | | | | | | | |  
 Db 1735  
 TTCTTCTGCCTCAGCCTCCCGAGGAGCTAGGATTACAGGTCCCTGCCACCATGCCTGAGT 1676

Qy 272 -----GAGGGG-----AG--  
 AATCTGGTCTCAA--- 292  
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 Db 1675  
 AATTTTTGTATTTTAGTAGAGATGGGGTTTCACCATGTTAGCCAAGCTGGTCTCGAATT 1616

Qy 293 --TGACAGTAGAGG-----ACCT---CCTCCCAAAGATACTGGTATTGC--  
 TCGAGT 338  
 | | | | | | | | | | | | | | | | |  
 |  
 Db 1615 CCTGACCTCAGGTGATCCGCCCACCTCAGCCTCCCAAAG-  
 TGCTGGGATTACGGGCGTGA 1557

Qy 339 TCCAC--TTGCTGG-----

AGCTGCCGGGGGCCAGGGATC----- 372  
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 Db 1556  
 GCCACGGTGCCTGGCCTCTATTTTTTATTTTAAATACCTTTTGGCCTGAAATCTATGTCC 1497

Qy 373 -----GGCAGGGCTGCTGG-CAG-----AGG-----  
 AATCCC 398  
 || |||| || ||  
 |||||  
 Db 1496  
 TCTGATTATCAACACTGCTTACCAGTTTTATTTTGTGGTATTTATTTCAATCAATCCC 1437

Qy 399 AGC-----TGG-----GGTTC--  
 CC 411  
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 ||  
 Db 1436  
 AGCTCTACAACCTACCAGTATAAAAATTTGGATCAGTTACTTAATCTTGCAGTTTCTTCC 1377

Qy 412 -----ATGCC-----  
 CAG 420  
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 Db 1376  
 TTTTAAAAATGGAATAATATTATCTATCATATAAAATGCCAGTTAACAAATATGAACTA 1317

Qy 421 GCTCCTG-----CAGG--ACTTGCTGGG-----  
 CCAGTCCGT 450  
 | ||| |||| | | || || | ||| |  
 |  
 Db 1316  
 ACACCTACAATGTGCCAGGCACCATTCTAGGGAATAGAATGTAAATAAGTTCAAGTTCTT 1257

Qy 451 G-----  
 GGGTTGGCGG----- 461  
 | | | | |  
 Db 1256  
 GACCTGAATAAGTTTACATTTTAGTGAGAAGACAGACAATAAATCAATAACATGTCCATT 1197

Qy 462 --GCCA-----TCCCA-----CAG---  
 GTGATG---- 480  
 |||| || ||| ||| |||||  
 Db 1196  
 ATGCCAGATAGTTTTAAATGTCACAAAGAAAAGGGGGAGCAATCAGATAGTGATGGAAG 1137

Qy 481 -ACCCACAAGGAAGAG-GTACTGTTGCAG-----CCGCTG--  
 CAG-- 517  
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 Db 1136  
 TTACACTCTAGAGAGGGTGGACAGAAAAAGTTTCTCTTAGGAGATGACATCTGAACAGAG 1077

Qy 518 -----CTG-----  
 CTGC-- 524  
 ||| | ||  
 Db 1076  
 ATCTAAATGACTGAGTACAAACCCCAATGGAAAAGTGATTGGTGTGTTGTGAAACAGCAA 1017

Qy 525 CACAGCCAGTAT-----TGCC-----GGGGCT----  
 CCAACCC 553  
 ||||| || | || | || |  
 Db 1016



Qy 906 CGCCCACCAAGGCCCTAG-ACTCATCTTGGCC--CTCCTCAGCTCC-  
 CTGCCTGTTT--- 958  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 418 CTCAAACACATACCCATGCTCTCTTC-  
 TGTCTTCTCTTCATATCATCTTCTAGAATTAG 360

Qy 959 -----CCCGTAAGGCTGTACATAGTCCTTTTATCTCC-  
 TTGTGGCCTATGAACTGGTT 1011  
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 Db 359 TTCTACCCCGATTTTC--  
 TACCAATTTATTTTATTTCCAATCAGTACATTGATTGAGATT 302

Qy 1012 TATAATAAACTCTTAAGAG----AACATTATAATTG 1043  
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 Db 301 TATCAATATGTTTTACCAATTTTATCATTTTTTTTGT 266

Search completed: March 9, 2010, 15:52:13  
 Job time : 7.14664 secs

GenCore version 6.3  
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OM nucleic - nucleic search, using sw model

Run on: March 9, 2010, 15:51:16 ; Search time 1 Seconds  
 (without alignments)  
 1134.946 Million cell

updates/sec

Title: US-10-572-905-25  
 Perfect score: 10862  
 Sequence: 1 cagttacagggagcaccacc.....aataaacatcagagtaactc  
 1828

Scoring table: BLOSUM62  
 Gapop 10.0 , Gapext 0.5

Searched: 417 seqs, 79705 residues

Total number of hits satisfying chosen parameters: 834

Minimum DB seq length: 0  
 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
 Maximum Match 100%  
 Listing first 45 summaries

Database : 7335755.seq:\*

Pred. No. is the number of results predicted by chance to have a  
 score greater than or equal to the score of the result being  
 printed,  
 and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
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Appli						
2	4473	41.2	2437	1	US-10-478-914-61	Sequence 61,
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4	4300.5	39.6	2437	1	US-10-478-914-61	Sequence 61,
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Appl							

#### ALIGNMENTS

##### RESULT 1

US-10-478-914-4

; Sequence 4, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-255226

; PRIOR FILING DATE: 2001-08-24

; NUMBER OF SEQ ID NOS: 417

; SOFTWARE: PatentIn version 3.2

; SEQ ID NO 4

; LENGTH: 3210  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-4

Query Match 42.4%; Score 4608; DB 1; Length 3210;  
Best Local Similarity 38.0%; Pred. No. 8.5e-303;  
Matches 1164; Conservative 0; Mismatches 623; Indels 1280;  
Gaps 163;

Qy 1 CAGTTACAGGGAGC-----  
ACCACCAGGGAACATCTCGGGGAGCCT----- 41  
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Db 133  
CAAGGACAAGGAGCTGCTGTTCGAAACAGCCTTCCTGCTCCCCAACCTGCCTCCCACCCA 192  
Qy 42 ---GGTT-----GGAAGCTGCAGGCTTAGT--  
CTGTCGGCT 72  
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Db 193 ACAGGTTTTGCATATACTCTACTGGGAAGAGGGACACACCCGACTGCATCACTGCC--  
CT 250  
Qy 73 GCGGGTCTCTGACTGCCCTG-----  
TGGGGAGGGTCTTGC 107  
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Db 251 CCAAGTCTCTCCCTGCCCTGTCCAGCATCCAGGAGCACCCCTAGTTGGGGAAG--  
CTT-C 307  
Qy 108 CTTAACATCCCTTG CAT-----TTGGCTGCAAAG-----AAATCTGC--  
TTGGAA 150  
| || ||| | || | || | | | || ||| ||  
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Db 308  
TGTGACTCCCCCTACAACAGCCTAGGATGGAGTGGGGTTTGTGAACAAATGCAGAAGGCA 367  
Qy 151 G----AAGGGGTTACGCTG-----TTTGGCCGG-----  
GCAGAAACT--- 183  
| | || | | ||| | |||| || |||| ||  
Db 368  
GTCTTAGGGAGGTGAGCTGACATGCCCCTGGCCTGTGGCTGGGAAGTAGCAGAGGCTAAG 427  
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AATGCTCC 215  
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Db 428  
GTTCTTCCCCGCTCTGGGGTTGCCAGGAGTAGCACTGGATCAGTCAGGTGACAGGGCT-C 486  
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CGGTG- 253  
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Db 487  
TCCTCTCTCTGAGCAGGTCCGGTGGCAGCCTTCAAGGTCGCCACGCCGTATTCCCTGTAT 546  
Qy 254 --CTG----GTGCTGCTGTTCTGCTCTCCACGATCGTCA-GCCAATGGATC--  
GTGGGCAAT 304  
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Db          547
GTCTGTCCCGAGGGGCGAAGACGTCACCCTCACCTGCAGGCTCTTGGGCCCTGTGGACAAA 606

Qy          305 GGACACG-----CAACTGATCTCTG-----
GCAGAAC 331
      || ||||
|
Db          607
GGGCACGATGTGACCTTCTACAAGACGTGGTACCGCAGCTCGAGGGGCGAGGTGCAGACC 666

Qy          332 TGT----AGCAC---CTCTTCC-----
TCAGGAAAT----- 355
      ||    ||| |   | | |||
Db          667
TGCTCAGAGCGCCGGCCCCATCCGCAACCTCACGTTCCAGGACCTTCACCTGCACCATGGA 726

Qy          356 GTCCACCA--CTGTTT-----CTCATCAT--
CACCAAACGAATGGCTGCAGTCTGTC 403
      | |||||  |||
|
Db          727
GGCCACCAGGCTGCCAACACCAGCCACGACCTGGCTCAGCGCCACGGGCTGGAGTCGGCC 786

Qy          404 -CAGGCCACCATG--
ATCCTGTGTCGATCATCTTCAGCATTTCTGTCTCTGTT-----C 451
      | | ||||||| | | | || ||| | | ||| |
|
Db          787
TCCGACCACCATGGCAACTTCTCCATCACCATGCGCAACCTGACCCTGCTGGATAGCGGC 846

Qy          452 CTGTTCTTCTGCC-----AACT--CTTCACC-
CTC----- 478
      || | || |||||
Db          847
CTCTACTGCTGCCTGGTGGTGGAGATCAGGCACCACCACTCGGAGCACAGGGTCCATGGT 906

Qy          479 ACCAAGGGG-
GGCAGGT----- 494
      ||| || | |||||
Db          907
GCCATGGAGCTGCAGGTGCAGACAGGCAAAGATGCACCATCCAACCTGTGTGGTGTACCCA 966

Qy          495 TTTACATCACTGGAATCT-----TCCAAATTCTTGC-----TGG--
TCTGTGC 535
      |   | || | ||| |
||
Db          967
TCCTCCTCCCAGGAGAGTGAAAGTAAGGGACCAACCTCTTGCCCTTTTGGGTTCTCTGT 1026

Qy          536 GTGAT-----GAGTGCTGCGGCCATCTACACGGTGAGGCACCCGGAGTGGCATC-
TCA 587
      | |           | |||| ||| || | || || ||| ||
|||
Db          1027 TTTCTTCTGTCTCATCTGCACCCA--GACCCTGTTTGGAACTC----
TGGCCTCATCA 1080

Qy          588 -----ACTCGGAT-----TACTCCTACGGTTTTCGC-----
CTAC 616
      ||| ||       | ||||| | || ||
|
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1081
CCCCAAGCCCTCAGAACCCCCCGGTCTCTCTCTTTTCTGCTGCTGCACATCCCTTCTGC 1140

Qy      617 ATCCTGGCCTGGGTG-----GCCTTCC-----CCCTGG---
CCCT 648

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      ||
Db      1141 TTCCT--
CCTTGGTGCAATCCCCAGAAGCCCACTCTCCTTCCATCTGCTCTGGAGTCTCT 1198

Qy      649 TCTC-----AGCGGTGTCATCTATGTGATCTT--GC--
GGAAACG-- 684

      ||| | | | | | | | | | | | | |
Db      1199
GCTCCTCTTGACTCTCTGGAGTGGCTGTGCCTTGGCAGTGACCTTTGGCCAGGGCAAGTG 1258

Qy      685 -CGAATGA-----GGCG-CCCAGACGGTCTGTCTGAGGCTCTG-----
AGCGTAC 727

      | ||| | | | | | | | | | | | |
      |
Db      1259 CCTCATGACAGGTACTGGGTGCCCCAGGCAG-
CTAAGTGCCGCCCTGCCCACCAGCCCCC 1317

Qy      728 -----ATAGGGAAGGGAGGAAG-----GGAAAACA----
GAAAGC----- 758

      | ||||| | | | | | | | | | |
Db      1318
TATGGCTTGGGAAGGCTGGGGGTCTCTTGGCCAACAGGGTGAAACCCCATCTCTACTAA 1377

Qy      759 AGACAAAAGAAAAAA-----GAGCTAGCCCAAATCCCA--AACTCAA---
AC 800

      | ||| | ||| | | | | | | | | | |
      |
Db      1378
AAACACAAAAATTAGCCAGGCATGGTGGTGC GCGCCTGTAGTCCCAGCTACTCAAGAGGC 1437

Qy      801 CAAACCAA-----
ACAGAAAGCAGTGGAGGTGGGGGTGCTGTGTTGATTGAAGAT---G 850

      | ||| | | | | | | | | | | | |
      |
Db      1438 TGAGGCAAGAGAATCGCTTGAACCCG-GGAGTCAGAGGTTGCAG-
TGAGCCGAGATCGCG 1495

Qy      851 TATATAATATCT--CCGTTTATAAAAAC-----
CTATTTATAACACTTTTACATATAT 902

      | || | | | | | | | | | | | | |
      ||
Db      1496
CCACTGCACTCCAGCCTGCTGATAGAGCAAGACTCCATCTCAAAAAAACAACCCAAAAT 1555

Qy      903 GTACATAGTATTGT---TTGCTTTTTATGTTGACCATCAGC--
CTCGTG----- 946

      | | | | | | | | | | | | | | | |
Db      1556 TTGCCTGGCATGGTGGCAGGC---ATCTGTAATCC--
CAGCTACTCGGGAGGCTGAGACA 1610

Qy      947 -----TTGAGCCT----
TAAAGAAGTAGCTAAGGAACTTTACATCCTAACAGTAT 992

      ||| | | | | | | | | | | | | |
Db      1611 TGAGAGCTGCTTGAACCTGGGAGGCAGAAGTTGCAGTGAGCC--

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Qy          993 AATCCAG-----CTCAGT-----
ATTTTTGTTTGTGTTTTTTGT 1025
      | | | | |
| | | | |
Db          1669
ACTCCAGCCTGGGTGACAGAGCGAGACTCTGTCCCAAAAATCAAAAAAATCACTTTTGG 1728

Qy          1026 TTGT-----TTGTTTTGTTTACCCAGAAATAAGAT-
AACTCC-----A 1063
      | |           | | | | | | | | | | | | | | | |
|
Db          1729 TAGAGATGCACTCTCGCTATG--
TTGCCCAGGCTGGTCTTGAACCTCTGGGCTCAATTGA 1786

Qy          1064 TC-TCGCCCCTTCCCTTTCAT----CTG-----AAAGAAGATA-CCTCCCT-
CCCAGTC- 1110
      | | | | | | | | | | | | | | | | | | | | | | | | | |
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Db          1787
TCTTCCCACCTTGACCTCCAAAGTGCTGGGATTACAGGTGTGAGCCACCATGCCTAGCCT 1846

Qy          1111 -----CACC-
TCATTTAGAAAACC----A 1129
                                   | | | | | | | | | |
|
Db          1847
CAGGGAATTCTTATAAGAACTCTATGAAGTAGGCATCACCATCTTCTCTGTATCCATGGA 1906

Qy          1130 AAGTGTGG-GTAGAAA-----CCC-----
CAAATGTCCAA----- 1158
      | | | | | | | | | | | | | | | | | | | |
Db          1907
AAGAGAGGCCTAGAGATGTATGCTAACTTGCCCCAAGCTCACATAGCCCAGGGTAGCATAG 1966

Qy          1159 -----AAGCC-----
CTT 1166
                                   | | | |
| |
Db          1967
CTGGGATGTTGAGCTGAGGCCGGAGGAGAAGTAGCAGTCGCTGGCAGAGCACACAGGCTG 2026

Qy          1167 TTCTGGTGGGTGACCCAGTGCAT-----CCAACAGAAACAGCCGC-
TGC----- 1209
      | | | | | | | | | | | | | | | | | | | | | | | |
Db          2027
CTCTGGGGGATGAGCTGGTGC GTTTAAGGAACAGGCCAGCACTGGCATTTCGCAAGCAGTG 2086

Qy          1210 -----CCG-----AACCT--
CTGTGTGAAGC----- 1228
                                   | | | | | | | | | |
Db          2087
GGGAAGGGGAGAGATGCCGAGGTGGTCACTTTCAGAGGCCTTTTTTTGTTT 2146

Qy          1229 -----TTTAC-----
GCGCACACGGA----- 1244
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Db          2147
GTTTTAATTTTTTGCTAGATTGATATTA AAAA ACTCATGTGGAGGAACTCAAGGAATGTTTA 2206

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Qy 1245 -----CAAAA-TGCCAA--ACTGGAGCCCTTGCAAAA-----  
CACGGCT- 1282  
  
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Db 2207  
GAAGACCAAAAGTCCCCAATGACAGGAACAAAAGCAACCAATTTTAACTTTCTCTTCTC 2266  
  
Qy 1283 -----TG-TGGCATTGGCATAC-----TTGCCCTT----ACAGG-----  
TGG----- 1314  
  
|| | |||| | | | | | | | | | | |  
Db 2267  
ATTCCTGTTTTTCATTGATTTCCCACATGTAGTCCTTTTGCTCAGGAAGTCTTTGGGGAAA 2326  
  
Qy 1315 ---AGTATCTTCGTCACACATCT-AAATGAGAAATCAG-----  
TGACAACAAG 1358  
  
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Db 2327 TTAAGGATCTTTGAAGC---TCTGAAATAGGTGATCAGGTTAGTGGTGTCTGTCAGC-  
TG 2382  
  
Qy 1359 TC-----TTTGAAATGGTGCTA-----  
TGGATT 1382  
  
|| || |||| | || |  
|||||  
Db 2383  
TCTAAGAGGTTGGAAAAATGAACTACTCAAGATAGTCACGAAAATACTGAAAGTTTGATT 2442  
  
Qy 1383 ACCATTCCCTTATTATCACTAA--TCATCTAAACAACCTCACTGG-----  
AA 1425  
  
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||  
Db 2443  
TTCTTTCCATATTTGAATTAATTTTTTCTGTTTGGACTGGAAGGGGTTTTTGTATAACTAA 2502  
  
Qy 1426 ATCCAATTAACA-----ATTTTACA-----  
ACATAAGATAGAATGGAGACCTGAATA 1472  
  
| || || |||| | | |||| | || | | ||  
||  
Db 2503 AACCTCAGCGCATAAAGGAGATTTAAAGGAGCACATGATTTAGTGGGTGGGCC---  
ATG 2559  
  
Qy 1473 ATTCT-----GTGTAAT-----  
ATAAATGGTTTATAA----- 1499  
  
| || ||| | | ||| ||| || |||  
Db 2560  
AAACTAGAGATGGGATTGGGGGTGAATTTGTCAATATCTGGATTTTAATCCAGACATCT 2619  
  
Qy 1500 CTGCTTTTGTACC--TAGCTAGGC-----TGCTATTATTACTAT----  
AATGAG--- 1542  
  
|||| | || | | || | || || | || | || |||  
Db 2620  
CTGCTAACGAGCCTTTGGTAAGTCACTTCAGATACTTTTCTCTTTTTTACAAAGAGAGG 2679  
  
Qy 1543 -----TAAATCAT-----AAAG--CCTT-----  
CATCACTCCCACA----- 1571  
  
| | | || |||| |||| | | | | ||||  
Db 2680  
GCTGGCTTAGTTATTTGCCAAAGCCCCTTCCAGGCCTGAATTCCACAAGTACGATTTACT 2739

Qy 1572 -----TTTT---TCTTACG-GTC-----GGAGCATCAGA-  
ACAAGCGTCTAG 1608  
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||||  
Db 2740 GTAGTGTCTTATCACTCTTTCATGTCACAATAGCGTGGAGCATTAGAGAAAAGC--  
CTAG 2797

Qy 1609 ACT-----CC-----  
TTGGGACCG---- 1622  
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Db 2798  
ACTTTTAGTTGATAGCCAGTTGAAATATCATTGATAGAATTTTAGTTTTAGGAAAAATTG 2857

Qy 1623 ---TGAGTTC-----CTA-----GAGCTTGG-----  
CT 1642  
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|  
Db 2858  
GTTTGATTTCTAGCTTTATTACTATTAGGTATGTGAGCTTGGGCAAATCGCTTAATCTTT 2917

Qy 1643 GGGTC-----TAGGCTG-----  
TTCTGTGCCTCCA---- 1667  
| ||| ||||| ||| | | |||  
Db 2918  
GAGTCTAGTTTTCTCTCAAAATGAGAACATTAGGCTAAATGATTTCCGAGTTTCCAGCTA 2977

Qy 1668 -----AGGACTGTCTGGCAA-----  
TGACTTGTATTGGCCACCACTGTAGATGTAT 1714  
|| || | | | ||| || | | | | | |  
||  
Db 2978  
GTCCTAGAGTTCTATATTTCTACATAGTTGAATTATTTTATCATGCTGTTGCTGGGGAAT 3037

Qy 1715 ATATGGTGCCCTTCTGATGC-----TAAGAC-----  
TCCAGACCTTTTGTTTTG 1759  
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Db 3038  
ATGACTAACCCTTTTGAAGCTACTAATTTTATGTCGAGCTTTAAAGTCCATAATTGTTAT 3097

Qy 1760  
CTTTGCATTTTCTGATTTTATACCAACTGTGTGGACTAAGATGCATTAAAATAAACATCA 1819  
||| || | || |||| || || | || |||| ||  
|  
Db 3098 CTT--CAGAAAATATTATTTGACCTACAGTATGTCC--  
AAATCAATTTAATAAAATCGCT 3153

Qy 1820 GAGTAAC 1826  
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Db 3154 TTATAAC 3160

RESULT 2  
US-10-478-914-61  
; Sequence 61, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 61  
; LENGTH: 2437  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-61

Query Match 41.2%; Score 4473; DB 1; Length 2437;  
Best Local Similarity 44.1%; Pred. No. 4.9e-294;  
Matches 1100; Conservative 0; Mismatches 659; Indels 736;  
Gaps 157;

Qy 3 GTTACAGGGAGCACCACCAG---  
GGAACATCTCGGGGAGCCTGGTTGGAAGCTGCAGG- 57  
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Db 1 GTTACT-TCTGCTCTAAAAGCTGCGGAATTCCTC---GAGCACTGTTGGC--  
CTACTGGG 54

Qy 58 ----CT---TAGTCTGTC---GGCTGCGGGTCTCTGACTGCC-----  
CTGTGGG----- 96  
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Db 55  
TGTACTGTGGAGACTGTCAAAGTCTCCCGAGCCCAATTTCCGGAAGCGGTGAGTTCTGA 114

Qy 97 --GAGGGTCTTG--CCTTAACATCCCTTGCAATTTGGCTGCAAAGAAAT---  
CTGCTTGA 149  
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||  
Db 115  
AAGAAGTTCTGACCGTAGTTTCCCAAGTCTGCGAATCCCCAACCATGAGCGCCTCGGG 174

Qy 150 AGAAGGG---GTTACGCTGTTTGCCGG--GCAGAACT--CC-----  
GCTGA 190  
| | | |||| | | || || |||| || ||  
||||  
Db 175  
CGTACTGTCCTTTACCCAGCAAGGATGGGAGCAGGTGCTGGCCAAAGTGAAACGGGCTGT 234

Qy 191 G-----CAGAACTTGCCGCCAG---AATGCTCCT--CCTGTTGCTGAGTATCAT--  
CGT 237  
| | | |||| | | | ||| ||| |||| | ||  
|||  
Db 235 GGTTTACCTGGAC--  
GCCGCCTGCGCCGAGAGCCTGCACTGGGGCTGCGGATCCACCCGT 292

Qy 238 CCTCCACGTCGCGGTGCTGGTGCTGCTGTTTCGTCTCC-ACGA----TCGT---CAGC-  
CA 288  
|||| | |||| | | || |||| || | ||  
||  
Db 293 -CTCCTGGAGGCGGTG-GGGGGCC-  
CTGACTGTCACCTGCGAGAGTTTCGAGCCCCGACGCA 349

Qy 289 ATGGATCGTGG-GCAATGGA-CAC---GCA-----ACTGATCT-----CT----  
 GGC 326  
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 Db 350  
 ATTGGTGGTGGAGCCAAGCAGCCCAAGGCAGTGTGTTGTGCTGAGCTGCCTGCTGAAAGGC 409  
 Qy 327 AGAACTGTAG-----CA-  
 CCTCTTCCTCAGGAA----- 353  
 | | | | | | | | | | | |  
 Db 410  
 CGGACCGTGGAGATCCTACGGGACATCATCTGCCGCAGTCACTTCCAGTATTGTGTGGTG 469  
 Qy 354 -----ATGTCCAC--  
 CACTGTTTCTCATCATCACCAAC----- 385  
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 Db 470 GTCACAACCGTGAGCCACGCTGTCCACCTCACAG---  
 CTAATCATGTCCCAGCGGCGGCA 526  
 Qy 386 -----GAATGGCTGCAGTC--  
 TGTCCAGGC----- 408  
 | | | | | | | | | | | |  
 Db 527  
 GCGGCCGAGATGGAGGGGCAGCAGCCGGTGTTCGAGCAGCTGGAGGAGAAGCTGTGTGAA 586  
 Qy 409 -----CACCATGATC---CTGTGCA-----TCATCTTCAGCATT-----  
 CT 441  
 | | | | | | | | | | | | | |  
 ||  
 Db 587  
 TGGATGGGCAACATGAACTACACGGCCGAGGTGTTCCATGTCCCGTTATTGCTTGCCCCCT 646  
 Qy 442 GT-----CTCTGTTTCTGTTCTTCTGC-----CAACTCTTCACCCTC----  
 ACCAAGG 485  
 | | | | | | | | | | | | | | | |  
 Db 647  
 GTTGCTCCCCACTTTGCCTTGACTCCAGCTTTTGCATCCCTTTTCCCACTGCTACCC--- 703  
 Qy 486 GGGGCAGGTTTTACATCACTGGAAT--CTTCAAAT--TCTTGCTGGT-  
 CTGTGCGTGAT 540  
 | | | | | | | | | | | | | | | |  
 |  
 Db 704 ----  
 CAGGATGTGCACCTCCTTAATAGCGCCCGACCGGACAAGAGGAAGCTGGGAAGCCT 759  
 Qy 541 GAGTGCTGCGGCCATCTACACGGTGAGGCACCCGGAGTGGCATCT-  
 CAACTCGGATTACT 599  
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 Db 760 GGGTGATGTGGACTCCACTACGCTAA---  
 CCCCAGAGCTGCTGCTGCAGATCAGATGCCT 816  
 Qy 600 -----CCTACGGTTTC---GCCTACATCCTGGCCT--  
 GGGTGG----- 632  
 | | | | | | | | | | | | | |  
 Db 817  
 AGTGTCAGGCCTCAGTTCTCTGTGTGAACATTTAGGAGTACGGGAGGAGTGTTTTGCTGT 876  
 Qy 633 -----CCTTCCCCCTGGCCCTTCTCAGCGG---TGTCATCTATGTGATCTTGCGGA-

AAC 683  
 |||| | || | || | ||| || | | || | ||| |  
 |||  
 Db 877 AGGTTCTTAAGTCAGG-TCATCGCTGCGGATCTGGCCAAT-  
 TATGCCCTGCAAAGAAC 934

Qy 684 GCGAATGAGGC-GCC-CAGACGGTCTGTCTGAGGCTCT----  
 GAGCGTACATAGGG---- 733  
 ||| || | || ||| | | || | || | | || | ||

Db 935  
 AGGAAGAAGACTGCTGCAGGCAGGGCATCAGTGGTTTTTGTGGACAGAACCTGGATCTC 994

Qy 734 AAGGGAGGA-AGGGAAAACAGAAAGCAGACAAAG-AAAAAGAGCT----  
 AGCCCCAAAT 787  
 | |||| | ||| | || || || | |||| | ||| |

|  
 Db 995 ACAGGAGCAGTTGGACATCATGGAGACAACCTTAGTAGAGAAGATCATTTTCAGCAC---  
 TT 1051

Qy 788 CCCAACTCAAACCAAACCAAACAGAAAGCAGTGGAGG-----  
 TGGGGGTTGCTG- 837  
 ||| | ||| ||| ||| ||| || | ||| || | ||| |

|||  
 Db 1052 CCCCAGCTC---CCAGGCCACACA-  
 AATGATGTGATGGTTAACATGATAGCGCTCACTGC 1107

Qy 838 ----  
 TTGATTGAAGATGTATATAATATCTCCGTTTATAAAACCTATTTTATAACACTTT- 892  
 | ||| || | ||| ||| | |||| | ||| | | ||| ||

Db 1108 ACTCCATACTGAGGAGGAAAATTATA-  
 ATGTGGTTGCACCAGGCTGTCTTTCACAATTCA 1166

Qy 893 -TTACATATATGTACATAG---  
 TATTGTTTGCTTTTTATGTTGACCATCAGCCTC----- 943  
 | ||| | ||| ||| ||| |||| | ||| || | | |

Db 1167 GTGACACCACAG-CCAAAGCCCTATGGGAAGCTT----  
 TACTGAACACTAAGCACAAAGA 1221

Qy 944 ----GTGTT-----GAGCCTTAAAGAAGTAGC--TAAG--  
 GAACCTTACATCCTAA 986  
 ||| | ||| | | || | ||| ||| || | ||

|  
 Db 1222  
 GGCAGTGATGGAAGTTTCGGAGACATCTAGTGGAAGCGGCAAGCAGAGAAAACCTGCCAAT 1281

Qy 987 C-----AGTAT-----AATC-----  
 CAGCTCAGTATTTTTGTTTTGTTTTTGT 1025  
 | |||| | || ||||| ||| | | |

|  
 Db 1282 CAAGATGAGTATGGGGAGAGTCACACCGGGACAGCTCA-----  
 TGTCTTATAT----T 1330

Qy 1026 TTGTTTGTTTTGTTTTTACC-CAGAAATAAGATAACTCCATCTCGCCCCTTCC--  
 CTT--- 1079  
 | | | | ||| || | || | || | ||| ||| |||

Db 1331  
 CAGCTCTTCAAGAACAACCTCAAAGCTCTAATGAATCATTGTGGCCTCCTCCAGCTTGGA 1390

Qy 1080 -----TCATCTGAAA-GAAGATACCTCC-----CTCCA-----GTCCAC---CT--  
 CA 1117

|  
 Db 1391  
 CTGGCCACAGCTCAAACGTTGAAACACCCACAGACTGCCAAGTGGGACAACTTTCTGGCT 1450  
  
 Qy 1118 TTTAGAAAAC-----CAAAGTGTGGGTAGAAACCCCAAATGTCC-----  
 AAA-- 1159  
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 Db 1451 TTTGAAAGGCTCCTTCTTCAGAGCATTGG--  
 GGAGTCAGCAATGTCCGTTGTGTTAAATC 1508  
  
 Qy 1160 -----AGCCCTT-TTCTGGTGGGTGACCCAGTGCATCCAAC-AGAA--  
 ACAGCCGCTGC 1209  
 |||| | | | || |||| | | |||| | | |||||  
 |||  
 Db 1509 AGCTGCTGCCCATGATTAAGCCTGTAACCCAGAG-AACCAACGAGGACTACAGCC-  
 CTGA 1566  
  
 Qy 1210 -----CCGAACC-TCT-GTGTGAAGCTTTAC-----GCGCACACGG-  
 ACAAAA 1249  
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 Db 1567  
 GGAAGTGTGATCCTTCTCATATATATTTATTCTGTCACTGGAGAGCTCACGGTAGACAA 1626  
  
 Qy 1250 TGCCCAAACCTGGAGCCCTTG-----CAAAAACAC---GGCT-----  
 TGTG---- 1286  
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 Db 1627  
 AGACCTGTGTGAAGCAGAAGAAAAAGTCAAGAAAGCATTGGCTCAGGTCTTCTGTGAGGA 1686  
  
 Qy 1287 ----GCATTGGCATACTTGC-----  
 CCTTACAGGTGGAGTATCTTCG----- 1324  
 | |||| || |||| |||| | | | |||||  
 Db 1687  
 ATCTGGATTGTCACCTTTGCTGCAAAAAATTACGGACTGGGACTCTTCAATTAATCTGAC 1746  
  
 Qy 1325 ---TCACACATCTAAA-----TG--  
 AGAAATCAGTGACAACAAGTCTTTGAAATGGTG 1372  
 |||| ||| || | || || | || || ||| | ||  
 ||  
 Db 1747 ATTTCAAAATCCAAAATTGCCGTGGATGAACTCT-TTACTTCA---  
 CTTCTGGGATATTG 1802  
  
 Qy 1373  
 CTATGGATTTACCATTTCCTTATTATCACTAATCATCTAAACAACCTCACTGGAAATCCAAT 1432  
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 |  
 Db 1803 CTGGAGCTCGGAGTCTCCTGA--  
 AACAGTTTAAAGTCTGTATATGTTCTGGAAATCATAC 1860  
  
 Qy 1433 TAACAA-----TTTTACAACAT-----AAGATAG-AATGGA-  
 GACCTGAATAATTCTGT 1479  
 || | || || || || || || || | || |  
 |  
 Db 1861  
 CCACCAGGCATCTTATAAGCCATTGTTGAAGCAAGTTGTGGAGGAAATATTTTCATCCCGA 1920  
  
 Qy 1480 G-----TAATATAAATGGTTTATAAC---  
 TGCTTTTGTACCTAGCTAGGCTGCTATTATT 1531



Db 1921 GAGGCCAGATTCCGTTGATATTGAACACATGTCTTCAGGCCTCACTGATCTCC--  
TTAAA 1978

Qy 1532 ACTATAATGAGTA-AATCATAAAG-----C--CTTCATC-----  
ACTCCCACATT 1573

ACTGGATTTAGCATGTTTCATGAAGGTGAGCCGGCCTCATCCTAGTGACTACCCCTCCTG 2038

Qy 1574 TTTCT-----TACGGTCGGAGCATCAGAA-----  
CAA----- 1600

Db 2039 ATCCTCTTTGTGGTAGGTGGGGTCACAGTCTCTGAAGTGAAATGGTCAAAGATCTTGTG 2098

Qy 1601 GCGTC-TAGACTCCTTGGGAC-----CGTG-AGT-----TCCTAGAG---  
CT 1637

Db 2099 GCATCGTTGAAGCC-  
AGGAACCCAGGTAATCGTGCTGTCCACGACTCCTGAAGCCACT 2157

Qy 1638 TGGCTGGGTCTAGGCTGTTCTGTGCCTCC-AAGGACTG---  
TCTGGCAATGACTT----G 1689

Db 2158 TAAC-  
ATTCTGAGCTGTTATTTGCAACTGACCGACTGCATCCAGACCTTGGCTTCTGAG 2216

Qy 1690 TATTGGCC-----ACCAACTGTAGATGTATAT----ATG-----  
GTGCC--- 1724

Db 2217 CATCCGCTAAGAAGATAAGACCTACTCAAGCTGGAAATGCCGATGCAATTTTCTGCCACC 2276

Qy 1725 -CTTCTGATGCTAAGACTCCA-----GACCTTTT--GTTTTTGC-----  
TTTGCA 1766

Db 2277 ACTCCAAATACT---  
CCTCCACAACCAGCGTCCCTGTCACTAATTGCGAGAATGATGGAA 2333

Qy 1767 TTTT--CTGAT-----TTTATACCAACT--GTGTGG-----  
ACTAAGATG 1802

Db 2334 TTCTGCCTGAAGGGTCTTGATACCTACTCAGTGAGGTACTTTGCTTGGATTGCTGTGATT 2393

Qy 1803 CATTAAAATAAACAT-----CAGAGTAACTC 1828

Db 2394 CTTAAAAAAAAAAAAAAAAAAGGCCACATGTGCTC 2428

RESULT 3  
US-10-478-914-4/c  
; Sequence 4, Application US/10478914  
; Patent No. 7335755

```

; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 4
; LENGTH: 3210
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-4

Query Match          40.0%; Score 4350; DB 1; Length 3210;
Best Local Similarity 39.8%; Pred. No. 1e-284;
Matches 1083; Conservative 0; Mismatches 675; Indels 966;
Gaps 155;

Qy          2 AGTTACAG-GGAGCACCACCAGGGA----ACATCTCGGGGAGCCT--
GGTTGGAAGCTGC 54
          | | | | | | | | | | | | | | | | | | | | | |
|
Db          3108 ATTTTCTGAAGATAACAATTATGGACTTTAAAGCTCG----
ACATAAAATTAGTAGCTTC 3053

Qy          55 ---AGGCTTAGTC-TGT----CGGCTGCGG-----
GTCTCTGACTGCCCTGTGGGGA- 98
          | | | | | | | | | | | | | | | | | | | | | |
|
Db          3052
AAAAGGGTTAGTCATATTCCCCAGCAACAGCATGATAAAATAATTCAACTATGTAGAAAT 2993

Qy          99 -----GGGTCCTTGCCTTAACATC-
CCTTGCAATTTGGCTGCAAAGAAATCTGCTTG 147
          | | | | | | | | | | | | | | | | | | | | | |
| | |
Db          2992 ATAGAACTCTAGGACTAGCTGGAAACTCGGAAATCATTTAGCC-
TAATGTTCTCATTTTG 2934

Qy          148 GAAGA-----
AGGGGTTACGCTGTTTGGCCGGGCAGAAACTCC----- 185
          | | | | | | | | | | | | | | | | | | | | | |
|
Db          2933
AGAGAAAAGTAGACTCAAAGATTAAGCGATTTGCCCAAGCTCACATACCTAATAGTAATA 2874

Qy          186 --GCT---GAGCAGAAC----TTGCC---GCCAGAATGCTCCTCCTGTT-----
GCTG 226
          | | | | | | | | | | | | | | | | | | | | | |
| | |
Db          2873
AAGCTAGAAATCAAACCAATTTTTCCTAAACTAAAATTCTATCAATGATATTTCAACTG 2814

Qy          227 AGTATCATC-----GTC-----CTCCACG---
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TCGCG-----G 251  
|  
|  
Db 2813  
GCTATCAACTAAAAGTCTAGGCTTTTCTCTAATGCTCCACGCTATTGTGACATGAAAGAG 2754

Qy 252 TGCT--GGTGCTGCTGT---TCGTCTCCACGATCGTCA-GCC--  
AATGGATCGTGGGCAA 303  
|  
|  
|  
Db 2753  
TGATAAGACACTACAGTAAATCGTACTTGTGGAATTCAGGCCTGGAAGGGGCTTTGGCAA 2694

Qy 304 TGGAC-ACGCAACTGATCTCT-----GGCAGAA-----  
CTGTAGCACCTCTTCCT 347  
|  
|  
|  
Db 2693 ATAAGTAAAGCCAGCCCTCTCTTTGTAAAAAGGAGGAAAAGTATCTGAAGTGACT-  
TACCA 2635

Qy 348 CAG-----GAAATGTC-----  
CACCCTGTT 368  
|  
|  
|  
Db 2634  
AAGGCTCGTTAGCAGAGATGTCTGGATTAAAATCCAGATATTGACAAATTCACCCCCAAA 2575

Qy 369 TCTCATC-----ATCACC-----  
AAACGAATG----- 390  
|  
|  
|  
Db 2574  
TCCCATCTCTAGTTTTATGGCCCACTAAATCATGTGCTCCTTTTAAATCTCCTTTA 2515

Qy 391 ---GCTGCAGT-----CTGTCCAGGCCACCATGATCCTGTGATCA-----  
TCTTC 433  
|  
|  
|  
Db 2514 TGCGCTGAGGTTTTAGTTATACAAAAACCCT--  
TCCAGTCAAACAGAAAAAATTAATTC 2457

Qy 434 -----AGCATTCTGTCTCT--GTTCT-----  
GTTCTTCT 461  
|  
|  
|  
Db 2456  
AAATATGGAAAGAAAAATCAAACCTTTCAGTATTTTCGTGACTATCTTGAGTAGTTCATTT 2397

Qy 462 GCCAA-CTCTT-----CACC-  
CTCACCAAGGGGGCAGGTTTTACATCACT 505  
|  
|  
|  
Db 2396 TCCAACCTCTTAGACAGCTGACAGACACCACTAACCT----  
GATCACCTATTTTCAGAGCT 2341

Qy 506 ----GGAATCTT-----CCAAATTCTTGCTGGTC-----  
TGTG----- 534  
|  
|  
|  
Db 2340  
TCAAAGATCCTTAATTTCCCAAAGACTTCCTGAGCAAAAGGACTACATGTGGGAAATCA 2281

Qy 535 -----CGTGATGAGT-----

GCTGC----- 549  
 | | | | | | | |

Db 2280  
 ATGAAAACAGGAATGAGAAGAGAAAGTTAAAAATTGGTTGCTTTTGTTCCTGTCATTGGG 2221

Qy 550 -----GGCCATCTACACG----GTGAG----  
 GCACCCGGAGT----- 578  
 | | | | | | | | | | | | | |

Db 2220  
 GACTTTTGGTCTTCTAAACATTCTTGAGTTCCTCCACATGAGTTTTTAATATCAATCTA 2161

Qy 579 -----GGCATCT-CAACTCGGATTACT-----  
 CCTACGG- 606  
 | | | | | | | | | | | | | |

Db 2160 GCAAAAATTAAACAAACAAAAAAGGCCTCTGAAAGTCAGGATACTGACCACCT-  
 CGGC 2102

Qy 607 ---TTTCGCCTACATC-CTG-----GCCTGGG-TGGCC--TTCC-----  
 CCCTG 643  
 | | | | | | | | | | | | | |

Db 2101  
 ATCTCTCCCCTTCCCCACTGCTTGCGAATGCCAGTGCTGGCCTGTTCTTAAACGCACCA 2042

Qy 644 GCCCTTCTCAGCGGTGTCATCTATGTGATCTTGCGGAAAC-GCGAATG-----  
 AGGC-- 694  
 | | | | | | | | | | | | | | | | | |

Db 2041 GCTCATCCCC-  
 CAGAGCAGCCTGTGTGCTCTGCCAGCGACTGCTACTTCTCCTCCGGCCT 1983

Qy 695 -----  
 GCCCAGACGGTCTGTCTGAGGCTCTGAGCGTACATAGGGAAGGGAGGAAG 744  
 | | | | | | | | | | | | | | | | | |

Db 1982 CAGCTCAACATCCCAGCTATGCTACCCTGGGCTATGTGAG--  
 CTTGGGCAAGTTAGCAT- 1926

Qy 745 GGAAAACAGAAAGC-----AGACAAAGAAAAAAGAGCTAGCC-----  
 CA-- 783  
 | | | | | | | | | | | | | | | | | |

Db 1925 --ACATCTCTAGGCCTCTCTTTCCATGGATACAGAGAAGATGGTGAT-  
 GCCTACTTCATA 1869

Qy 784 -----AAATCCCAA-----CTCAAACC---  
 AAACCAAACAG 812  
 | | | | | | | | | | | | | | | | | |

Db 1868  
 GAGTTCTTATAAGAATTCCCTGAGGCTAGGCATGGTGGCTCACACCTGTAATCCCAGCA- 1810

Qy 813 AAAGCAGTGGAGGT----GGGGGTTG--CTGTTGA-----TTGAAGA-----  
 TG- 850  
 | | | | | | | | | | | | | | | | | |

Db 1809 ----  
 CTTTGGAGGTCAAGGTGGGAAGATCAATTGAGCCCAGGAGTTCAAGACCAGCCTGG 1754

Qy 851 --TATATA-----ATATCTCC-----  
 GGTTTATAAACCTATTT 882  
 | | | | | | | | | | | | | | | | | |

|

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Db          1753
GCAACATAGCGAGAGTGCATCTCTACCAAAAGTGATTTTTTTTGATTTTTTTGGGACAGAGT 1694

Qy          883 ATAACACTTTTTACATATAT---GTACATAGTATTGTT-----
TGCTTTTTATGT 929
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
||
Db          1693
CTCGCTCTGTGCACCCAGGCTGGAGTGCAGTGGTGTGATCTCGGCTCACTGCAACTTCTGC 1634

Qy          930 TGACC-----ATCAGC-CTCGTGT-
TGAGCCTTAAAGAAGTAGCTAAGGAACITTTACA 980
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|||||
Db          1633 CTCCCAGGTTCAAGCAGCTCTCATGTCTCAGCCTCCC--GAGTAGCTGGG----
ATTACA 1580

Qy          981 ---TCCTAACAGTATAATCCAGCTCAGTATTTTTGTTTTGTTTTTTGTTTGT--
TGTTT 1035
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1579 GATGCCTGCCACCATG--CCAG-GCA--
AATTTTGGGTTGTTTTTTTTTGAGATGGAGTCT 1525

Qy          1036 TGTTTTACC-----
CAGAAATAAGATAACTCCATCTCG-----C 1069
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1524
TGCTCTATCAGCAGGCTGGAGTGCAGTGGCGCGATCTCGGCTCACTGCAACCTCTGACTC 1465

Qy          1070 CC-----CTTCCCTTTTCATCTG-----AAAGAAGAT-----
AC 1097
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
||
Db          1464
CCGGGTTC AAGCGATTCTCTTGCCCTCAGCCTCTTGAGTAGCTGGGACTACAGGCGCGCAC 1405

Qy          1098 CTCCCTCCCAGTCCACCT-----CATTTAGAAAA-----
CCAAAGTGTGGGT--- 1139
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1404
CACCATGCCTGGCTAATTTTTTGTTTTTTAGTAGAGATGGGGTTTCACCCTGTTGGCCAA 1345

Qy          1140 -AGAAACCCCAAATGTCCAAAAGCCCTT---
TTCTGGTGGGTGACCCAGTGCATCCAACA 1195
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1344 GAGGACCCCCAGCCTTCC-CAAGCCATAGGGGGCTGGTGGG-----
CAGGGCGGCACTTA 1291

Qy          1196 GAAACAGCC----GCTGCCCCGAACCTCT-GTGTGAAGCTTTAC---GC----
GCACACGG 1243
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1290 G---
CTGCCTGGGGCACCCAGTACCTGTCATGAGGCACTTGCCCTGGCCAAAGGTCCTG 1234

Qy          1244 ACAA----AATGCCCAAACCTG-GAGCCCT----
TGCAAAAAACAC----- 1278

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Db 1233  
 CCAAGGCACAGCCACTCCAGAGAGTCAAGAGGAGCAGAGACTCCAGAGCAGATGGAAGGA 1174

Qy 1279 -----GGCTTGTGGCATTGGCAT-----ACTTGC-----  
 CCTTACA 1309

Db 1173  
 GAGTGGGCTTCTGGGGATTGCACCAAGGAGGAAGCAGAAGGGATGTGCAGCAGCAGAAAA 1114

Qy 1310 GGTGGAGTATC-----TTC-----GT--  
 CACACA---T 1332

Db 1113  
 GGAGGAGGACCGGGGGTCTGAGGGCTTGGGGTGATGAGGCCAGAGTTCCAAACAGGGT 1054

Qy 1333 CTAAATG-----AGAAATCAG-  
 TGACAACAAGTCTTTGAAATGGTGCTATGGATTTACCA 1386

Db 1053  
 CTGGGTGCAGGATGAGGACAGAAGAAAACAGAGAACCCAAAAGGGGCAAGAGGTTGGTC- 995

Qy 1387 TTCCTTATTATCACTAATC-----ATCTAAACAACCTCAC---TGGA--  
 AATCCAA 1431

Db 994 --  
 CCTTACTTTTCACTCTCTCTGGGAGGAGGATGGGTACACCACACAGTTGGATGGTGCATC 937

Qy 1432  
 TTAACAATTTTACAACATAAGATAGAATGGAGACCTGAATAATTCTGTGTAATATAAATG 1491

Db 936 TTTCCTGTCTGCACCTGCAGCTC-CATGGCACCATGGA-----  
 CCCTGTGCTCCGAGTG 883

Qy 1492 GTTTATAACTG--CTTTTGTACCTAGCT-----AGGCTGCTATT-----  
 AT 1530

Db 882 G-  
 TGGTGCCTGATCTCCACCACCAGGCAGCAGTAGAGGCCGCTATCCAGCAGGGTCAGGT 824

Qy 1531 TAC----TATAATGAGTAAAT---CAT-----AAAGCCTTCATCACTCCC---  
 ACAT 1572

Db 823 TGCGCATGGTGATGGAGAAGTTGCCATGGTGGTCGGAGGCCGAC-  
 TCCAGCCCGTGGCGC 765

Qy 1573 TTTTCTTACGGTCGGAGCATCAGAACAAGCGTC----TAGACTCCTTGGGACC-GTG-  
 AG 1626

Db 764 TGAGC--CAGGTCGTGGCT--  
 GGTGTTGGCAGCCTGGTGGCCTCCATGGTGCAGGTGAAG 709

Qy 1627 TTCCTAGAGCTT-----GGCTGGG-----TCTAGGCTGTTCTGTGCCT----  
 CCA 1667

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      ||| | | | | | | | | | | | | | | |
||
Db          708
GTCCTGGAACGTGAGGTTGCGGATGGGCCGGCGCTCTGAGCAGGTCTGCACCTCGCCCCCT 649

Qy          1668 AGGACTGTCTGGCAATGACTTGTA-----TTGGCCA-----
CCAA 1702
      | | | | | | | | | | | | | | | | | |
||||
Db          648
CGAGCTGCGGTACCACGTCTTGTAGAAGGTCACATCGTGCCCTTTGTCCACAGGGCCCAA 589

Qy          1703 ----CTGTAGATGTATATATGGTGCCCTTCTGATGCTAAGACTCCAGACCTTTTG---
TT 1755
      | | | | | | | | | | | | | | | | | |
|
Db          588 GAGCCTGCAGGTG-----AGGGTGACGTTCTGCCCCCTCGGG--
ACAGACATACAGGGAAT 536

Qy          1756 TTTGCTTTGCATTTT-----CTGATTTTATACCAACT---GTGTGGACTAAGATG-
CA 1804
      | | | | | | | | | | | | | | | | | |
||
Db          535
ACGGCGTGGCGACCTTGAAGGCTGCCACCGGACCTGCTCAGAGAGAGGAGAGCCCTGTCA 476

Qy          1805 TTAAAATAAACATCAGAGTAACTC 1828
      | | | | | | | | | | | | | | | | | |
Db          475 CCTGACTGATC--CAGTGCTACTC 454

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#### RESULT 4

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US-10-478-914-61/c
; Sequence 61, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 61
; LENGTH: 2437
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-61

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Query Match          39.6%; Score 4300.5; DB 1; Length 2437;
Best Local Similarity 42.7%; Pred. No. 5.9e-282;
Matches 1033; Conservative 0; Mismatches 716; Indels 669;
Gaps 147;

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Qy          2 AGTTAC-----AGGGAGCA----CCACCAGG--GAA-----CA-
TCTCG----- 33      ||| |      ||| | ||      || |||| |||      || |||||
Db          2373
AGTACCTCACTGAGTAGGTATCAAGACCCCTTCAGGCAGAATTCCATCATTTCTCGCAATTA 2314

Qy          34 -----GGGAGCCTGGTTG-----GAAGCTGCAG-----
GCTTAGTCT 65      |||| |||||||      | | ||||      || | |
|
Db          2313
GTGACAGGGACGCTGGTTGTGGAGGAGTATTTGGAGTGGTGGCAGAAAATTGCATCGGCA 2254

Qy          66 GT--CGGCT---GCGGGTC-----TCT----GACTGCCCTGTGGGGAGGGTCT---
TGC 107      | | ||| | ||||      ||| | ||| | | | |||||
|||
Db          2253
TTTCCAGCTTGAGTAGGTCTTATCTTCTTAGCGGATGCTCAGAAGCCAAGGTCTGGATGC 2194

Qy          108 CTTAACATCCCTTGCAATTTGGCTGCAAAGAAATCT-----GCTT-GGAAGAAG---
GGG 157      | | ||||| | | || || ||| |      |||| | || |
||
Db          2193 AGTCG-
GTCAGTTGCAAATAACAGCTCAGGAATGTTAAGTGGCTTCAGGAGTCGTGTGGA 2135

Qy          158 TTACGCTGTT---TGG---
CCGGGCAGAAACTCCGCTGAGCAGAACTTGCCGCCAGAATG 211
      | | || ||| || ||| ||| || | ||| ||| | |
|
Db          2134 CAGCACGATTACCTGGGTTCTTGCTTCAACGATGCC-ACAAGATCTT--
TGACCATTTT 2078

Qy          212 CTCCTCCTGTTGCTGAGTATCATCGTCCTCCACGTCGCGGTGCTGGTG-----
CT 261      | || | | ||| | | | | |||| | || | || |
||
Db          2077 C-ACTTCAGAGACTGTGACCCAC--
CTACCACAAAGAGGATCAGGAGGGGGTAGTCACT 2021

Qy          262 G-----CTGTTCGTCTCCACGATCGT----CAGCCAAT-----GGATC---
GTG 298      | | || || || || | | | | |||| |      |||| |
|
Db          2020
AGGATGAGGCCGGCTCACCTTCATGAACATGCTAAATCCAGTTTTTAAGGAGATCAGTGAG 1961

Qy          299 GGCAATGGACACGCAACTGATCTCTGGCAGAACTGTAGC--
ACCTCTTCCTCAGG----- 351
      | | |||| | || || | | ||| | | ||| ||| ||
Db          1960 GCCTGAAGACATG---TGTTCAATATC--AACGGAATCTGGCCT---
CTCGGGATGAA 1911

Qy          352 AAATGTCCACCACTGTTTCTCATCATCA----
CCAAACGAATGGCTG----- 394
      | || ||| |||| || | ||| || | | ||| |||
Db          1910 ATATTTCTCCACAACCT-
GCTTCAACAATGGCTTATAAGATGCCTGGTGGGTATGATTT 1852

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Qy 395 -----CAGTCT-----GTCCAG--GCCACCATGATCCTG-----  
TC---- 423  
| | | | | | | | | | | | | | | | | |

Db 1851  
CCAGGAACATATACAGACTTAAACTGTTTCAGGAGACTCCGAGCTCCAGCAATATCCCGA 1792

Qy 424 -----  
GATCATCTTCAGCATTCT----- 441  
| | | | | | | | | | | | | | | | | |

Db 1791  
AGTGAAGTAAAGAGTTTCATCCACGGCAATTTTGGATTTGTGAAATGTCAGATTAATTGAA 1732

Qy 442 --GTCTCTGTTCTGTTCTTCTGC--CA-----ACTCTTCA---  
CCCTCACCAAGG--- 485  
| | | | | | | | | | | | | | | | | |

Db 1731  
GAGTCCCAGTCCGTAATTTTTTGCAGCAAAGGTGACAATCCAGATTCTTCACAGAAGACC 1672

Qy 486 -GGGGCAGGTTTTACATCACTGGAATCTTCCAAATTCTTGCTGGTCTGTG-----  
CGTG- 538  
| | | | | | | | | | | | | | | | | |

| | | |  
Db 1671 TGAGCCAATGCTTTCTTGACT-TTTTCTT-  
CTGCTTCACACAGGTCTTTGTCTACCGTGA 1614

Qy 539 -----ATGAGTG----CTGCGG-  
CCATC-----T 557  
| | | | | | | | | | | | | | | | | |

|  
Db 1613  
GCTCTCCAGTGACAGAATAAATATATATGAGAAGGATCAGCAGTTCCTCAGGGCTGTAGT 1554

Qy 558 ACACGGTGAGGCACCCGGAGT----GGC---ATCT----CAACT-CGGATTACTC-  
CTAC 604  
| | | | | | | | | | | | | | | | | |

| |  
Db 1553 CCTCGTT--  
GGTTCTCTGGGTTACAGGCTTAATCATGGGCAGCAGCTGATTTAACACAAC 1496

Qy 605 GGT-TTCGCCTACATCC---TGGCCTG----GGTGGCCTTCCC----CCTG-----  
GCC 646  
| | | | | | | | | | | | | | | | | |

|  
Db 1495  
GGACATTGCTGACTCCCCAATGCTCTGAAGAAGGAGCCTTTCAAAGCCAGAAAGTTGTC 1436

Qy 647 CTTCTCAGCGGTGTCATCTATGTGATCTTGCGGAAACGCGAATGAGGCGCCAG-  
ACGGT 705  
| | | | | | | | | | | | | | | | | |

Db 1435 CCACTTGGCAG-----TCTGTG-GGTGTTTC---  
AACGTTTGTAGCTGTGGCCAGTCCAAG 1385

Qy 706 CTGTCTGAGG-  
CTCTGAGCGTACATAGGGAAGGGAGGAAGGGAAAACAGAAAGCAGACAA 764  
| | | | | | | | | | | | | | | | | |

|  
Db 1384 CTGGAGGAGGCCACAATGATTCATTAGAGCTTTGAGGTTGTTCTTGAAG--  
AGCTGAATA 1327

Qy 765 AGAAAAAAGAGCTAGCCCAAAT-----

CCCAAACCTCA----- 797  
 | | | | | | | | | |  
 Db 1326  
 TAGGACATGAGCTGTCCCGGTGTGACTCTCCCCATACTCATCTTGATTGGCAGGTTTTCT 1267

Qy 798 -----AACCA-----AACCAAACAGAAAGCAGTG-----  
 GAGGTGGGGG 831  
 | | | | | | | | | |  
 |  
 Db 1266  
 CTGCTTGCCGCTTCCACTAGATGTCTCCGAACTTCCATCACTGCCTCTTTGTGCTTAGTG 1207

Qy 832 TTGCTGT--TGATT-----GAAGATGTATATAATATCTCCGTTTATAAAA-----  
 CC 877  
 | | | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1206 TT-  
 CAGTAAAGCTTCCCATAGGGCTTTGGCTGTGGTGTCACTGAATTGTGAAAGACAGCC 1148

Qy 878 TATTTATAACACTTTTTACATATATGTACATAGTATTGTTTGTCT-----  
 TTTTATGT 929  
 | | | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 1147 TGGTGCAACCACATTATA-  
 ATTTTCCTCCTCAGTATGGAGTGCAGTGAGCGCTATCATGT 1089

Qy 930 TGACCATCAGCCTCG--TGTTGAGCCT-----TAAAGAAGTAGCT--  
 AAGGAACCTTTAC 979  
 | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1088 TAACCATCA-CATCATTTGTGTGGCCTGGGAGCTGGGGAAGT-  
 GCTGAAATGATCTTCTC 1031

Qy 980 ATCCTAA-----CAGTATAATCCAGCTCAGTATTTTTGTGTT-  
 TTGTTTTTTGTTTGT 1031  
 | | | | | | | | | | | | | | | | | | | |  
 Db 1030 -  
 TACTAAGTTGTCTCCATGATGTCCAACCTGCTCCTGTGAGATCCAGGGTTCTGTCCACAA 972

Qy 1032 GTTTTGTGTT-TTACCCAGAAATAAGATAACTCCATC----  
 TC-----G 1068  
 | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 971  
 AAACCACTGATGCCCTGCCTGCAGCAGTCTTCTTCCTGTTCTTTGCAGGGGCATAATTGG 912

Qy 1069 CCCCTTCC----CTTTCATCTGAAAGAAGATACCT-----CCCTC--  
 CCAGTCCAC 1113  
 | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 911  
 CCAGATCCGCAGCGATGACCTGACTTAAGGAACCTACAGCAAAACACTCCTCCCGTACTC 852

Qy 1114 CTCATTTAGAAAAC-CAAAG---TGTGGGTAGAAACCC--CAAATGTCCAAAAGCC-  
 CTT 1166  
 | | | | | | | | | | | | | | | | | | | |  
 Db 851 CTAAAT--  
 GTTCACACAGAGAACTGAGGCCTGACACTAGGCATCTGATCTGCAGCAGCAG 794

Qy 1167 TTCTGGTGGGTGACCCAGTGCATCCAACAGAAACAGCC--GCTGCCCCG--

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AACCTCTGTG 1222      ||||| | | | | |||| | | || | | | | |||||
||
Db          793 CTCTGG-GGTTAGCGTAGTGGAGTCCAC---ATCACCCAGGCTTCCCAGCTTCCTCT-
TG 739

Qy          1223 TGAAGCTTTACGCGCACACGGACAAAATGCCCAAAGTGG---
AGCCCTTGCAAAA----- 1274
                | | | |||| | || | |||| | | | | ||||
Db          738 TCCGGTCGGGCGCTATTAAAGG---
AGGTGCACATCCTGGGGTAGCAGTGGGAAAAGGGAT 682

Qy          1275 -
ACACGGCTTGTGGCATTGGCATACTTGCCCTTACAGGTGGAGTATCTTCGTCACACATC 1333
                | ||| | || | |||| | | | |||| | | | |||
Db          681 GCAAAAGCTGGAGTCA-AGGCAAAGT-----
GGGGAGCAACAGGGGCAAGCA-- 636

Qy          1334
TAAATGAGAAATCAGTGACAACAAGTCTTTGAAATGGTGCTATGGATTTACCATTCTTA 1393
                || | || || | |||| | | | || | || | || | || | |||
|
Db          635 ATAACGGGACAT--GGAACACCTCGGCCGTG---TAGTTC-ATG---
TTGCCCATCCATT 585

Qy          1394 TTATCA-CTAATCATCTAAACAAGT-----
ACTGGAAATCCAATT----- 1433
                || || || || | | |||| | || | |||| |
Db          584 CACACAGCTTCTCCTC-
CAGCTGCTCGAACACCGGCTGCTGCCCCCTCCATCTCGGCCGCT 526

Qy          1434 ---AACAAATTTTACAACATAAGATAGAATGGAGACCTGAATAATTC-----
TGTG----- 1480
                | | |||| || || | | || | | | | || | ||||
Db          525 GCCGCCGCTGGGACATGATTAGCT-
GTGAGGTGGACAGCGTGGCTCACGGTTGTGACCAC 467

Qy          1481 -TAATATAAATGGTTTTATAACTGC-----TTTTGTACC-TAG---CTAGGCTG-
CTATT 1528
                | | | |||| | |||| | |||| |||| | | | |||
Db          466 CACACAATACTGG-
AAGTGAAGTGGCGCAGATGATGTCCCGTAGGATCTCCACGGTCCGGC 408

Qy          1529 ATTACTATAATGAGTAAATCATAAA---GCCTT-----CATCACTC--
CCACATTTTT 1576
                || | | || | |||| |||| | | |||| ||||
||
Db          407
CTTTCAGCAGGCAGCTCAGCACAAACACTGCCTTGGGCTGCTTGGCTCCACCACCAATTG 348

Qy          1577 CTTACGG--TCGGA-----GCA-----
TCAGAACAAAGCGTCTAGACTCCTTGGGACC 1621
                | | |||| |||| | |||| | | | | |||| |
|||
Db          347 CGT-CGGGCTCGAACTCTCGCAGGTGACAGTCAGGGCCCCCCAC-
CGCCTCCAGGAGACG 290

Qy          1622 GTGAGTTCC-TAGAGCTTG-GCTGGGTCTAGGC-----
TGTTCTGTGCCTCCAAGGA 1671
                | | |||| |||| | |||| |||| |||| | |||

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|
Db          289
GGTGGATCCGCAGCCCCAGTGCAGGCTCTCGGCGCAGGCGGCGTCCAGGTAAACCACAGC 230

Qy          1672 CTGTCTGGCAATGACTTGTATTGGCCACCAACTGTAGATGTATATATG---GT--
GCCCT 1726
      | | | | | | | | | | | | | | | | | |
||||
Db          229 CCGTTTCACTTTGGCCAGCACCTGCTCCCATCC-
TTGCTGGGTAAAGGACAGTACGCCCC 171

Qy          1727 T----CTGATGCT--AAGACTC-CAGACCTTTTGTGTTTTGCTTTGCA-----
TTTTCT 1772
      | | | | | | | | | | | | | | | |
||||
Db          170 AGGCGCTCATGGTTGGGGATTTCGAGA-
CTTGGGAAACTACGGTGCAGGAACCTCTTTCA 112

Qy          1773 GATTTTATACCAACTG-----
TGTGGACTAAGATGCATTAAATAAACATCAG----- 1820
      | | | | | | | | | | | | | | | |
Db          111
GAACTCACCCTTCCGGAAATTGGGCTCCGGGAGACTTTGACAGTCTCCACAGTACACCC 52

Qy          1821 AGTA-----ACTC 1828
      | | | | | | | |
Db          51 AGTAGGCCAACAGTGCTC 34

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RESULT 5

US-10-478-914-21

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; Sequence 21, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
;   APPLICANT: NAKAGAWARA, AKIRA
;   TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
;   FILE REFERENCE: 7388-80899
;   CURRENT APPLICATION NUMBER: US/10/478,914
;   CURRENT FILING DATE: 2003-11-26
;   PRIOR APPLICATION NUMBER: PCT/JP02/05294
;   PRIOR FILING DATE: 2001-05-30
;   PRIOR APPLICATION NUMBER: JP 2001-162775
;   PRIOR FILING DATE: 2001-05-30
;   PRIOR APPLICATION NUMBER: JP 2001-255226
;   PRIOR FILING DATE: 2001-08-24
;   NUMBER OF SEQ ID NOS: 417
;   SOFTWARE: PatentIn version 3.2
; SEQ ID NO 21
;   LENGTH: 3589
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-478-914-21

```

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Query Match          39.3%; Score 4272.5; DB 1; Length 3589;
Best Local Similarity 36.6%; Pred. No. 5.2e-279;
Matches 1177; Conservative 0; Mismatches 628; Indels 1409;
Gaps 171;

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Qy          1 CAGTTACAGG-----GAGCACCACCAGGGAACATCTC---
GGGGAG-- 38

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Db          390
CAAATACTGGCATGAAGACTGCCTGAAGTGTGCCTGCTGTGACTGTCTGCTTGGGGGAGGT 449

Qy          39  -----CCTGGTTGGAAGCTGCAG-----GCTTAGTCTGTC---
GGCT 72

      ||      || |  ||  ||      ||  || || ||

||||
Db          450
GGGCTCCACCCTGTACACTAAAGCTAATCTTATCCTTTGTGCGCAGAGACTATCTGAGGCT 509

Qy          73  -----GCGGGT-----CTCTGACTG-----CCCTG---
TGGGGGAGGGT 102

      ||||      | ||| |||      ||||  | || ||

|||
Db          510
CTTTGGTGTAACGGGAAACTGCGCTGCCTGTAGTAAGCTCATCCCTGCCTTTGAGATGGT 569

Qy          103 -----CTTGCC-----TTAACATCC---CTTGCATT---
TGGCTGCAAAGAAATCT 142

      | ||||      || ||  ||      ||| ||  || | ||  |

||||
Db          570
GATGCGTGCCAAGGACAATGTTTACCACCTGGACTGCTTTGCATGTCAGCTTTGTAATCA 629

Qy          143 GC-----TTGGAAG-----AAGGGGTAC--
GCTGTTTGCCGGGCAGA 179

      |      ||||      || |  || |  || | || || | |

|
Db          630
GAGATTTTGTGTTGGAGACAAATTTTTCCTAAAGAATAACATGATCCTTTGCCAGACGG- 688

Qy          180 AACTCCGCTGAGCAGAACTTGCCGCCAGA-----ATGCTCCTCCTGTT-GCTGAG-
TATC 232

      ||| |  ||| |  ||  |  |||      |||| || |  ||| ||||

||||
Db          689 -ACTAC---
GAGGAAGGTTTAATGAAAGAAGGTTATGCACCCCAGGTTTCGCTGATCTATC 744

Qy          233 ATCGTCCTCCACGTCGCGGTGCTG-GTGCTGCTGTTCGT-----
CTCCAC--G 277

      | | ||  ||  |  | | | |  || |  ||||  |||||

|
Db          745 AACATCACCCCATTAAGAATACAGAGCACTAC-
ATTCTTTTATCTTTTTTGCTCCACATG 803

Qy          278 ATCGTCA-----GCCAATGGATC-----
GTGGGCA----- 302

      | | |  | ||  ||| |  |  ||||

Db          804
TACATAAGAAATTGACACAGGAACCTACTGAATAGCGTAGATATAGGAAGGCAGGATGGTT 863

Qy          303 --ATGG----ACACGC-AACTG-ATCTCTG-
GCAGAACTGTAGCACCTCTTC----- 345

      ||||  | | ||  |||| |||| |  | ||  | || ||  |||

Db          864
ATATGGAATAAAAAGGCGGACTGCATCTGTATGTAGTGAAATTGCCCCAGTTCAGAGTTGA 923

Qy          346 -----CTCAGGAAATGTCCACC--ACTG-----
TTTCTCATC 375

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| | | | | | | | | | | | | | | | | | | | | |
| |
Db          924
ATGTTTATTATTAAAGAAAAAGTAATGTACATATGGCTGGATTTTTTTGCTTGCTATTC 983

Qy          376 -----ATCAC-----CAAACGA-----ATGG-
CTGCAGTCT----- 400
| | | | | | | | | | | | | | | | | | | | | |
Db          984
GTTTTTGTGTCACTTGGCATGAGATGTTTATTTTGGACTATTGTATATAATGTATTGTAA 1043

Qy          401 -----GTCCAG-----GCCACCA-----
TGATCCTGTGATCA 428
| | | | | | | | | | | | | | | | | | | | | |
|
Db          1044 TATTTGAAGCACAAATGTAATACAGTTTTATTGTGTTACCATTGTGTTCCATTG--
CT 1101

Qy          429 TCTT-----CAGCATT-----CTGTCTCTG-----TTCCTGTT-----
CTTC 460
| | | | | | | | | | | | | | | | | | | | | |
| | |
Db          1102
TCTTTGTATTGTTGCATTTAGTACAATCAGTGTTTAACTTACTGTATATTTATGCTTTC 1161

Qy          461 TG-----
CCAACTCT-----T 471
| | | | | | | | | | | | | | | | | | | | | |
|
Db          1162
TGTATTTACCAGCTATTTTAAATGAGCTGTAACCTTCTAGTAAAGAATTGAAAAGCAAAT 1221

Qy          472 CACCCT-----CACCAAGGG---GGGCAGGTTTTACATC-----
ACTGGAA--- 509
| | | | | | | | | | | | | | | | | | | | | |
Db          1222
CTCACTAATGATACACAGATAGATAAAGCAAGTCTATCAACATTAAAAATACTAAAAAAT 1281

Qy          510 -----TCTTCCA--
AATTCTTGCTGGTCTGTGCGTGATG 541
| | | | | | | | | | | | | | | | | | | | | |
|
Db          1282 AAAGACACACACAGAGCATTTTAGTGACATCCACTACTTATTGCCG--
CTATGAGTTA-G 1338

Qy          542 AGTGCTGCGGCCATCTACACGGTGAGGCACCC-----GGAGT-----
GGC--- 581
| | | | | | | | | | | | | | | | | | | | | |
Db          1339 AGT-CTAT--
CAGTGTTCTTGTTATAACCCCTATTTTCAGGGGGTTAAAAATCAGCTTT 1395

Qy          582 -----ATCTCAAC-----TCGGATTACTCCTACG-----
GTT 608
| | | | | | | | | | | | | | | | | | | | | |
| |
Db          1396
AAAAAATACATAAAAAATTTTCATCTTAAAGCACTTTTCATTTTATACCAACGTGAAAAGTG 1455

Qy          609 TC-----GCCT-ACA----TCC-----TGGCC-----
TGGGTG 631

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      |           | | | | | | | | | |
|||
Db      1456
CCATTTT TAGAATAACTTTAAAGCTTAACAGGTTTCCTTTTAATATCCTTTTTTTGTGTG 1515

Qy      632 GCCTT-----CCCCCTGGC-----
CCTTCTCAGCGGTGTCATCTATGTGATCT-- 674
      | | | | | | | | | | | | | | | |
Db      1516
CTCTTTACTTACACAATGGCTTTGTTTTGCTTTTTTCAGCCACACCCCTTATGTGAACTAG 1575

Qy      675 TGC-----GGAAACGCG-----
AATGAGGCGCCAGACGGTCTG----- 708
      | | | | | | | | | | | | | | | |
Db      1576
TGCCTTTGGGTATCACGTAAAATTTTTTCAAAGGGTTACTTTAAAATCTGTTACCACA 1635

Qy      709 --TCTGAG-----
GCTCTGAG 722
      | | | | | | | | | | | | | | | |
||
Db      1636
ATTATGAGATGATTTTTTAAGTGATAAATTAACTTCTTCTTGATAAATTCTGCCCAGAT 1695

Qy      723 CGTACATAGGGAAGGGAGG-----
AAGGGAAAACAGAAAGCAGACAAAGAAA 769
      | | | | | | | | | | | | | | | |
|||
Db      1696
CTCTCCACAAGAGCTGAGGGTTTCATAACTTTATGGCTTAATAAATGTATGACACTGAAA 1755

Qy      770 AAA---
GAGCTAGCCCAAAATCCCAAACCTCAAACCAAACCAACAGAAAGCAGTGGAGGT 826
      | | | | | | | | | | | | | | | |
|||
Db      1756 AGATTTGAGTGTG---AATCTACTGAAATCACTATAATGCACATTG-
AAGCTATGATGGT 1811

Qy      827 G-----GGGGTTGCTGTTGATTGAAG-----
ATGTATATAATATCTCC----- 864
      | | | | | | | | | | | | | | | |
Db      1812
ATTTGAGTAGTGAGGTTACTTTTGATCGGAGCAACATAATGCTCATAGAATCTTCTAGAA 1871

Qy      865 -----
GGTTTATAAA----- 874
      | | | | | | | | | | | | | | | |
Db      1872
GAAGAGAAACAAAGGGATTGATAAAATGCTGAGAACTAGTGATTATATATTTTTCTGTAT 1931

Qy      875 --ACCT---ATTTAT-----AACACTTT---
TTACATATATGT---- 904
      | | | | | | | | | | | | | | | |
Db      1932
TTACCTGACATTTATTTTAATGTTCAAAAAGTAAACACTTTAAGTTTGATGTGTTTTACT 1991

Qy      905 ---ACATAGTATT--GT--TTGC-----
TTTTTATGTTGA----- 932
      | | | | | | | | | | | | | | | |
Db      1992

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CTCTCATTGTTTTTAAGTAATTGCCAACTCAGAATACATTCTTAGGCTGAAATTTGTC 2051

Qy          933 ---CCAT-----CAGCCT--CGTGTTGAGCCTT-AAAGAAG-
TAGC 966
          |||| | | | | | | | | | | | |
          |  ||  ||||  |  ||  |  |||||
|||
Db          2052 TTTCATTTTTTAAGGTGAAATAGTACTACCTTACGTGAT-
AGCATACAAAAGAAGAAAGC 2110

Qy          967 -----
TAAGGAACT----- 975
                                   ||||| |
Db          2111
TCTAGAAAGAGAAAATTATGGAGAATGATTATTTAAATTACAATTAAGGAAATGAGAATAT 2170

Qy          976 -----TTACATC-----
CTAACAGTA----- 991
                                   ||  ||  ||  ||  ||
Db          2171
GATCCCCCTCTTCCGAGTTGCCACAAACTTGCTTCTTTGCTTTTGCTCCCTGTAATAGAA 2230

Qy          992 -----TAATC-----CAGCTCAG-----
TATTTT----- 1010
          ||||  |  ||  |  |||||
Db          2231
CTACTTTTCAACAAATCTAATTTTGCACGGCACCGTTAACCATATTTTCACTACAGCAAA 2290

Qy          1011 -----TGTTTT--GTTTTTGTGTTGTTGTTTGTGTTT---
ACCCAGAAATAAGATAACT 1060
          ||  |  ||||  |  ||  |||||  ||  |  |  ||  ||  |
Db          2291
CTTAGTGCTATGGGTTTTCTTTTCTTTGTTTTTTTCTTGATCACTTGTATAGGAAACAA 2350

Qy          1061 CCATCTC-----GCC-----CCTTC-----
CCTTTCATCTGAA 1088
          |  |  ||  ||  ||||  ||||  |  ||  ||
|||
Db          2351
CATTTTCCAGTGTTATTTGCATATATATTTTGTCTTCCAATATATGCATTACAGATGAA 2410

Qy          1089 ----AGAAG--ATACCTCCCTCCC-----
AGTCCACCTCATTTAGAAAAACCAAA----- 1131
          |  |  |||||  |  |  |||  |||  ||  |  |
Db          2411
AATTAAATGTTATACCTGAATTCTTGGGTTGGGGCCAAAATATTAAGCTGAAAATAATGC 2470

Qy          1132 --GTGTGG----GTAGAAACCCCAA-----ATGTCCA-----
AAA 1160
          |||||  ||  ||  ||  ||  |||  ||
Db          2471
TGGTGTGGATTTGTTTTTAAACAAAGCTTTATTATGAACATGCATGTGAATCTGGATATT 2530

Qy          1161 GCC-CTT-----TTCTG-----GTGGGTGA-----
CCCAGTG 1186
          |||  |||  |||||  |||  |||  ||  |
||
Db          2531
GCCTCTTATTTTTAAGAAAATGGTTCTGTGAAAAGTGAATGATATGTATTTTTTCCAAATG 2590

Qy          1187 CATCC---AACAGAAACAGCCGCTGCCC-

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GAACCTCTGTGTGAAGCTTTACGCGCACACG 1242  
 |  
 Db 2591  
 CTTTCATGGTTAGGAGTCTTCAAGTTCCATGTTCCCCAGATTTGAGATATACTAAAGAAAG 2650

Qy 1243 GA---CAAAATGCCCAAACCTGGAGCCCTTGCAA--  
 AACACGGCTTGTGGCATTGGCATA 1298  
 |  
 Db 2651 AAATTCAAAGTAGCTATTTGGGGCCACAAAATAACTATTATTTTAGCCTTAG--  
 AGCC 2709

Qy 1299 TTGCCC---TTACAGGTGGAGTA---TCTT-CGTCAC-----  
 ACATC 1333  
 |  
 Db 2710  
 TTACACTTGTTCATGAAGAGAAAGGACTTGCATAACCAAATAAACAAAGCAAGACAAA 2769

Qy 1334 TAAAT-----  
 GAGAAATCAGTGACAACAAGTCTTTGAAATGGTGCTATG----- 1377  
 |  
 Db 2770  
 TTAAAAATATGTGGGGGAGAGATCAGTGAAAAGTGGTTTTCTTAATGCAGCCCTGCTGGT 2829

Qy 1378 ---GATTTACCATTTCCTT-----  
 ATTATCA----- 1399  
 |  
 Db 2830  
 CCCCATTAAACAATTGCTTGAAATTCACATGGATGTAAATTATAATTGTCAGGATCTTAT 2889

Qy 1400 -CTAATCATC--TAAACAACCTCACTGGAAATCC----  
 AATTAACAATTTTACAACATAAG 1452  
 |  
 Db 2890  
 TCAGATGATCTTTTAAGGTTTAACTGGTTTTGCTTTTGTTTATCTATATGTCAAATACT 2949

Qy 1453 ATAGAATGGAGACCTGAATAAT-TCTG-----TGT---  
 AATATAAATG----- 1491  
 |  
 Db 2950  
 TGTAAATTGGGAACAACTTCTCTCAGCTTCTTGAAGTTGTTCAACTATCCTTGCCACTG 3009

Qy 1492 -----GTTTATAACTGCTT----TTGTACCTA----  
 GCTAGG----- 1520  
 |  
 Db 3010  
 GAAGACCAAACAAGGTTTTTCACTGCTTTTTCTTTTACATAATATGCTGAGAATTATTTCT 3069

Qy 1521 -CTGCTATT-----ATTACTATAAT--  
 GAGTAAATCATAAAGCCTTCATC--- 1562  
 |  
 Db 3070  
 TATGCTTTTTTACTACAAACAAAATTACTCACCTGGATTAAAGATTAAAGCCTTAATCTGT 3129

Qy 1563 -----ACTCC-----  
 CA----- 1569  
 |  
 Db 3130  
 TTAGATTATCTTTAATCTCCATGAAATCGTGAAATAAGACAAGAATAGTGTTCAGCTGT 3189

Qy 1570 ----CATTTTTC-----TTAC-----GGTCGGAGCAT-----CAGAAC-  
AAGC 1602  
||||| | | | |  
|  
Db 3190  
AGGCCATTTTACAGCTAATTGCCATAAATTGTAGCATTTATTGACCTGAAGTACTAAGC 3249  
Qy 1603 -----GTCTAGACTCCT-TGGGACCGTGAGTT-----  
CCTAGAGCTTGGCT 1642  
| | | | | | | | | | | | | | | |  
|  
Db 3250  
TAATTGTCTTGACTACTCAAAGCCCCTGAATTGTTGTCAACTTTCCCCTTTGTGTTGTGT 3309  
Qy 1643 GG-----GTC---TAGGCTGT--TCTG-TGCCTCCA--AGGACT-GTCTG-----  
GCA 1681  
| | | | | | | | | | | | | | | |  
|  
Db 3310  
AGCCCTAACGTCATTTAGCTTGTTGTCTGATGCCTCCAGTAGGACACCTCCGATGGAGCT 3369  
Qy 1682 ATGACTT-----GTATTGGCCACCAACTGTAGATGTAT-----  
ATATGGTGCCCTTCT 1729  
| | | | | | | | | | | | | | | |  
|  
Db 3370 TTGATTTCTGAGCAGCGAAAGCTCCCTTCCTAAGATGCATCTCGCATAGGCTGCC--  
TAT 3427  
Qy 1730 GATG-----CTAAGACTCCA-----GACCT---  
TT 1751  
| | | | | | | | | | | | | | | |  
|  
Db 3428  
GATGAAGGACCGTGCACCTCCACTCCAACAGAGTGCTGAGTTTAAAAGTTGACCTGTGTT 3487  
Qy 1752 TGT--TTTTGCTTTGCATTTT-CTGATTTTATACCAACTGTGT--  
GGACTAAGATGCATT 1806  
| | | | | | | | | | | | | | | |  
Db 3488 TGTAATTTCACTTT-  
CATCTTGCTTAATAAATATCTGCTGGATTCTTTCAAAAAAAAAAAAA 3546  
Qy 1807 AAAATAAACATCAGAGTAA-----CTC 1828  
| | | | | | | | | | | | | | | |  
Db 3547 AAAAAAAAAAAAAAAAAAAGGCCACATGTGCTC 3580

RESULT 6

US-10-478-914-21/c

; Sequence 21, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775

; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 21  
; LENGTH: 3589  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-21

Query Match 38.9%; Score 4224.5; DB 1; Length 3589;  
Best Local Similarity 35.1%; Pred. No. 1.2e-275;  
Matches 1149; Conservative 0; Mismatches 649; Indels 1477;  
Gaps 162;

Qy 1 CAGTTACAG----GGAGCAC-----CACC--AGGGAACATCT-  
CGGGGAGCCT----G 42

| ||| || || |||| || | ||| | | | | | | || |  
|  
Db 3458  
CTGTTGGAGTGGAGGTGCACGGTCCTTCATCATAGGCAGCCTATGCGAGATGCATCTTAG 3399

Qy 43 GTTGAAGCT---GCAGGCTTAG-----TCTGTCGG-----  
CTGCGGGTC 79

| || |||| || |||| || || |||| || || ||  
Db 3398 GAAGGGAGCTTTTCGCT-  
GCTCAGAAATCAAAGCTCCATCGGAGGTGTCCTACTGGAGGCA 3340

Qy 80 TCTGACTGCC--CTGTGGGGAG---GGTCTTGCC-----  
TTAACATCCC 118

|| ||| | || | | || || | || || ||  
Db 3339  
TCAGACAACAAGCTAAATGACGTTAGGGCTACACAACACAAAGGGGAAAGTTGACAACAA 3280

Qy 119 TT-----GCATTTGGCTG-CAAAGAAATCTGCTTGGAAGAAGGGGT-----  
TAC- 161

|| || || || | | || || || || | | ||  
|||  
Db 3279  
TTCAGGGGCTTTGAGTAGTCAAGACAATTAGCTTAGTACTTCAGGTCAATAAATGCTACA 3220

Qy 162 -----GCTGT---TTGGCCG--  
GGCAGAAACTC----- 184

|||| |||| || |||| |  
Db 3219  
ATTTATGGGCAATTAGCTGTAAAATGGCCTACAGCTGAAACACTATTCTTGTCTTATTTTC 3160

Qy 185 -CG-----CTGAGCAG-----  
AACTTGCCGCCAG- 207

|| || || || | |||  
||||  
Db 3159  
ACGATTTTCATGGAGATTAAAGATAATCTAAACAGATTAAGGCCTTAATCTTTAATCCAGG 3100

Qy 208 -----  
AATGCTCCTCCTGTT----- 222

||| ||| | | ||  
Db 3099  
TGAGTAATTTTGTGTTGTAGTAAAAAGCATAAGAAATAATTCTCAGCATATTATGTAAAAG 3040

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Qy      223  -----GCTG-----AGTATCATCGTCC-----
TCCACGTCGCG 250
      || |
|
Db      3039
AAAAAGCAGTGAAAAACCTTGTGTTGGTCTTCCAGTGGCAAGGATAGTTGAACAACTTCAAG 2980

Qy      251  GTGCTG-GTGCTG-CTGTTC-----
GTCT----- 272
      ||| | | | | | | |
Db      2979
AAGCTGAGAGAAGTTTGTTCCTCAATTTACAAGTATTTTGACATATAGATAAAACAAAAGCA 2920

Qy      273  -----CC-----ACGATCGTCAGCCAATGGATCGTG-----
GG 300
      || | | | | | | | |
Db      2919 AAACCAGTTAAACCTTAAAAGATCATCTG-
AATAAGATCCTGACAATTATAATTTTACAT 2861

Qy      301  CAATG-GA----CACGCAACTGATC-----TCTGGCAGAACTGT-----
AGCACCTC- 342
      | | | | | | | | | | | | | |
|
Db      2860
CCATGTGAATTTCAAGCAATTGTTAATGGGGACCAGCAGGGCTGCATTAAGAAAACCACT 2801

Qy      343
TTCCTCAGGAAATGTCCACCAC-----T 365
      || | | | | | | | |
|
Db      2800 TTTCAC-
GATCTCTCCCCACATATTTTAAATTTGTCTTGCTTTGTTTATTTTGGTTAT 2742

Qy      366  G-----TTTCTCATCAT-CACCAAACGAATGGCT-----
GCAGTCT 400
      | | | | | | | | | | | |
|
Db      2741
GCAAGTCCTTTCTCTTCATGAAACAAGTGTAAGGCTCTAAGGCTAAAATAATAGTTATTT 2682

Qy      401  GTCCAGGCCACCA--TGATCCTGTGTCGATCATC-
TTCAGCATCTGTCTCTGTTC----- 451
      | | | | | | | | | | | | | |
Db      2681
TTGIGGGCCCCAAATAGCTACTTTTGAATTTCTTTCTTTAGTATATCTCAAATCTGGGGA 2622

Qy      452  -CT--GTTCTTCTGCCAACTCTTCACCCT-CACCAAGGGGG-----
GCAGGTTTTACA-- 500
      | | | | | | | | | | | | | |
Db      2621 ACATGGAAC-
TGAAGACTCCTAACCATGAAGCATTTGGAAAAATACATATCATTCACT 2564

Qy      501  --TCACTGGA-----ATCT-----
TCCAAATTCTTGCTGGTCTGTGC 535
      ||| | | | | | | | | |
|
Db      2563 TTTCACAGAACCATTTTCTTAAAAATAAGAGGCAATATCCAGATT-
ACATGCATGTTC 2506

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536 GTGATGA-----GT-----GCTGCGGC-----
CATCTACACGGTGAG 567
| | | | | | | | | | | | | | | |
|
Db 2505
ATAATAAAGCTTTGTTTAAAAACAAATCCACACCAGCATTATTTTCAGCTTAATATTTTG 2446

Qy 568 GC----ACCC-----GGAGTGGCA-----
TCTCAACTCGGATTACTCCTACGG-- 606
| | | | | | | | | | | | | | | | | |
Db 2445 GCCCAACCCAAGAATTCAGGTATAACATTTAATTTTCATCT-
GTAATGCATATATTGGA 2387

Qy 607 -----TTTCGCCTACATC-CTGGCCTGGGTGG---CCT-----
TC--- 637
| | | | | | | | | | | | | | | |
Db 2386
AGGACAAAATATATATGCAAATAACACTGGAAAATGTTGTTTCTATACAAGTGATCAAG 2327

Qy 638 -----CCCCTGGCCCTTC-----
TCA 653
| | | | | | | | | | | | | | | |
|
Db 2326
AAAAAAACAAAGAAAAAGAAAACCCATAGCACTAAGTTTGCTGTAGTGAAAATATGGTTA 2267

Qy 654 GCGGTGTCAT-----CTATGT-----
GATCT----- 674
| | | | | | | | | | | | | | | |
Db 2266
ACGGTGCCGTGCAAAATTAGATTTGTTGAAAAGTAGTTCTATTACAGGGAGCAAAAGCAA 2207

Qy 675 ---TGC-----GGAAACGCGAATGAGGCG-----
CCCAGACGG--- 704
| | | | | | | | | | | | | | | |
Db 2206
AGAAGCAAGTTTGTGGGCAACTCGGAAGAGGGGATCATATTCTCATTTCTTAATTGTAA 2147

Qy 705 -----TCTGTCTGAGGC-----TCTGAGCGT-----
AC 727
| | | | | | | | | | | | | | | |
| |
Db 2146
TTTAAATAATCATTTCTCCATAATTTCTCTTTCTAGAGCTTTCTTTTGTATGCTATCAC 2087

Qy 728 ATAGGGAAG-----
GGAGGAAGGGAAAAACAGAAAGCAGACAAAGAAAAA-- 771
| | | | | | | | | | | | | | | |
Db 2086
GTAAGGTAGTACTATTTACCTTAAAAAATGGAAAGACAAATTTACGCCTAAGAATGATG 2027

Qy 772 -----AGAGCTAGCCCCAAATCCCAAATC-----
AAACCAAACCAAACAGAAA 815
| | | | | | | | | | | | | | | |
| | |
Db 2026 TATTCTGAGTTGGC---
AATTACTTAAACAATGAGAGAGTAAACACATCAAACCTTAA 1970

Qy 816 G-----
CAGTGGAGGTGGGGGTTGCTGTTGATTGAAGATGTATATAATAT 860

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||  
 Db 1969 GTGTTTACTTTTTGAACA-TTAAAATAAATGT--  
 CAGGTAAATACAGAAAAATATATAAT 1913  
  
 Qy 861 CTC-----CGGTTTATAAAACCTATTTATAACACTTTTTTACA-----  
 TATATGT 904  
 ||  
 ||||  
 Db 1912 CACTAGTTCTCAGCATTTTATCAATCC-  
 CTTTGTTCCTCTTCTCTAGAAGATTCTATGA 1854  
  
 Qy 905 ACATAGTATTG-----TTTGCTTTTTATGTTGACCATC--  
 AGCCTCGT 945  
 ||| | ||| | || | | | ||||| ||| ||  
 Db 1853 GCATTATGTTGCTCCGATCAAAAGTAACCTCACTACTCAAAT--  
 ACCATCATAGCTTC-- 1798  
  
 Qy 946 GTTGAGCCTTAAAGAAGTAGCTAAGGAACCTTTAC-----  
 ATCCTAACAGTATAATCCA- 998  
 || || ||| || | | || | || || ||| | |||| | ||  
 ||  
 Db 1797 AATGTGCATTATAGTGATTTC--  
 AGTAGATTACACTCAAATCTTTTCAGTGTCATACAT 1740  
  
 Qy 999 --GCTCAGTATTTTTGTTTTGTT-----TTTTGTTTGTTTGTTTTG-----  
 TTTT 1041  
 | || | ||| || | ||| | | | |||  
 |||  
 Db 1739 TTATTAAGCCATAAAGTTATGAAACCCTCAGCTCTTG-  
 TGGAGAGATCTGGGCAGAATTT 1681  
  
 Qy 1042 ACCCAGAAATAAGATAACTCCATCTC----  
 GCCCCTTCCCTTTTCATCTGAAAGAAGATAC 1097  
 | || || ||| | | | ||| | | ||| | |||  
 Db 1680  
 ATACAAGAAGAAGTTTAATTTATCACTTAAAAATCATCTCATAATTGTGGTAACAGATTT 1621  
  
 Qy 1098 CT-----CCCT-----CCC-----  
 AGTCCAC----- 1113  
 | |||| ||| |||||  
 Db 1620  
 TTAAAGTAACCTTTTGGAAAAATTTTACGTGATACCCAAAGGCACTAGTTCACATAAGG 1561  
  
 Qy 1114 -----CTCATTTAG-----  
 AAAACCAAAGTGTTGGGTA----- 1140  
 || | || ||| ||| |||| |||  
 Db 1560  
 GGTGTGGCTGAAAAAGCAAAACAAAGCCATTGTGTAAGTAAAGAGCACACAAAAAAGGA 1501  
  
 Qy 1141 -----GAAACCCCAAATG-----TCCAAAA---  
 GCCCTTTTCTGGTGGG 1176  
 ||||| | | ||||| || ||||| ||  
 ||  
 Db 1500  
 TATTAAAAGGAAACCTGTTAAGCTTTAAAGTTATTCTAAAAATGGCACTTTTCACGTTGG 1441  
  
 Qy 1177 TGAC-----CCAGTGCAATCCAACAGAA-----  
 ACAGCCGCTGCCCCGA 1213  
 | |||| | | ||| | ||| | |

|  
Db 1440  
TATAAAATGAAAGTGCTTTAAGATGAAATTTTTATGTATTTTTTTAAAGCTGATTTTTTAA 1381

Qy 1214 ACCTCTGTGTGAAG-----CTTTACGCGCACACGGA-----CAAAAT-----  
GCCCA 1255  
| | | | | | | | | | | | | | | | | | | | | |

Db 1380  
CCCCCTGAAAATAGGGGGTTATAACAAGAACACTGATAGACTCTAACTCATAGCGGCAAT 1321

Qy 1256 AACTGGAG-----  
CCCTTGCAAAAACACGGCTTGTGGC----- 1288  
| | | | | | | | | | | | | | | | | | | | | |

Db 1320 AAGTAGTGGATGTCACT--  
AAAATGCTCTGTGTGTGTCTTTATTTTTTTAGTATTTTTTAAT 1263

Qy 1289 ATTGGCATACTTGCCCTTACAGGTGGAGTATC-----  
TTC--- 1323  
| | | | | | | | | | | | | | | | | | | | | |

Db 1262  
GTTGATAGACTTGCTTTATCTATCTGTGTATCATTAGTGAGATTTGCTTTTCAATTCTTT 1203

Qy 1324 -----GTCACA---CATCTAAA-----TGAGAAAT-----  
CAGT 1349  
| | | | | | | | | | | | | | | | | | | | | |

| | | |  
Db 1202  
ACTAGAAAGTTACAGCTCATTTAAAATAGCTGGTAAATACAGAAAGCATAAATATACAGT 1143

Qy 1350 GA-----CAACAAGTCTTTG-----  
AAATG 1369  
| | | | | | | | | | | | | | | | | | | | | |

| | | |  
Db 1142  
AAGTTTAAACACTGATTGTACTAAATGCAACAATACAAAGAAGCAAATGGAACACAAATG 1083

Qy 1370 -----GTGCTATGGAT-  
TTACCATTCTTATTATCACT 1401  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 1082  
GTAACACAATAAACTGTATTACATTTGTGCTTCAAATATTACAATACATTATATACAAT 1023

Qy 1402 AATC--ATCTAAACAACCTCA-----CTGG-----  
AAATCC 1429  
| | | | | | | | | | | | | | | | | | | | | |

| | | | |  
Db 1022  
AGTCCAAAATAAACATCTCATGCCAAGTGACACAAAACGAATAGCAAGCAAAAAAATCC 963

Qy 1430 A-----ATTA-----  
ACAAT 1439  
| | | | | | | | | | | | | | | | | | | | | |

| | | |  
Db 962  
AGCCATATGTACATTACTTTTTTCTTTAATAATAAACATTCAACTCTGAACTGGGGCAAT 903

Qy 1440 TTTACAACATA-AGATAGA-----ATGGAG-----  
ACCTGAATAATT 1475  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 902  
TTCACATACATACAGATGCAGTCCGCCTTTTATTCCATATAACCATCCTGCCTTCCTATAT 843

Qy 1476 CTGTGTAATATAAATGGTT----TATAACTGCTTTTGTACCT----  
AGCTAGGC----- 1521  
|| | || | |||| | | | ||| |||| | || |

Db 842  
CTACGCTATTTCAGTAGGTTCTGTGTCAATTCTTATGTACATGTGGAGCAAAAAAGATAA 783

Qy 1522 -----  
TGCTATTATTACTATAATGAG----- 1542  
|||| | | || |||| |

Db 782 AAGAATGTAGTGCTCTGTATTCT-  
TAATGGGGTGATGTTGATAGATCAGCGAACCTGGGG 724

Qy 1543 -----TAAATCATAAAGCCTTCATC--ACTCC-----  
CACATTTT 1576  
| |||| || |||| || | || | || ||

||  
Db 723  
TGCATAACCTTCTTTTCATTAAACCTTCCTCGTAGTCCGTCTGGCAAAGGATCATGTTATT 664

Qy 1577 CTTACGG-----TCGGAGCATCAGA-----  
ACAAGC----- 1602  
||| || | | || || || || ||

Db 663  
CTTTAGGAAAAATTTGTCTCCAACACAAAATCTCTGATTACAAAGCTGACATGCAAAGCA 604

Qy 1603 GTC-----TAGAC----TCCTTGGGAC-CGTGA--  
GTTCTAGAGCTTGGCTGGG--- 1645  
||| || || |||| || | | | | | || || || ||

Db 603  
GTCCAGGTGGTAAACATTGTCCTTGGCAGCATCACCATCTCAAAGGCAGGGATGAGCTT 544

Qy 1646 --TCTAGGCTG-----TTCTGTGCCTCCAAGGA--CT-----GTCT----  
GGCAATG 1684  
| |||| | | || | |||| || || || || || || ||

|  
Db 543  
ACTACAGGCAGCGCAGTTTCCCGTTACACCAAAGAGCCTCAGATAGTCTCTGCGACAAAG 484

Qy 1685 ACT-----TGTATTGG-----CCAC-----  
CAACTGT----- 1706  
| |||| || |||| | || ||

Db 483  
GATAAGATTAGCTTTAGTGTACAGGGTGGAGCCACCTCCCCAAGCGACAGTCACAGCA 424

Qy 1707 -----AGATGTATATATG-----GTGCCCTT-----  
CTGATG 1733  
| || | || | |||| || | |

|  
Db 423  
GGCACACTTCAGGCAGTCTTCATGCCAGTATTTGTCCAGTGCCTTTAGAAGATACCGGTC 364

Qy 1734 CTAAGACT-----CCAG----ACCTTTTGTTTT--  
TGCTTTGCATTTTCTGA-- 1774  
|| || |||| |||| | || || || || || || ||

Db 363 CTTGATCTTTCGGTTGCAGCCAGCACAACTTTCGGCTTGGTGTCTGGC-  
TGGACTGAGA 305



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Qy      1775 ----TTTTATACCAA-----CTGTGTG-----
GACTAAG 1799
          || |||||
||
Db      304
GCATTTGTATACCAAACTTTTCTCCTTTTCTGCATGAGTTGACTTAGGCGTGTCTGAG 245

Qy      1800 ATGCA-----TTAAAATAAACATCAGAGTAACTC 1828
          |||| | | | | | | | | | |
Db      244 TTGCAGCAGCTTCGCATTGAGCACCA----AACCC 214

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RESULT 7

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US-10-478-914-64
; Sequence 64, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 64
; LENGTH: 2120
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-64

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Query Match      38.9%; Score 4221.5; DB 1; Length 2120;
Best Local Similarity 44.1%; Pred. No. 9e-277;
Matches 990; Conservative 0; Mismatches 705; Indels 549;
Gaps 134;

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Qy      1 CAGTTACAG-GGAGCACCACCAG--GGAACATCT-
CGGGGAGCCTGGTTGGAAGCTGCAG 56
          | ||| | | | | | | | | | | | | | |
|
Db      5 CCTGTACGGAAGTGTTACTTCTGCTCTAAAAGCTGCGGAATTCC---
TCGAGCACTGTTG 61

Qy      57 GCTTAGTCTGTGCG-GCTGCGG--GTCTCTGAC-TGCCCTGTG--
GGGAGGGTCTTGCCTT 110
          || || ||| | |||| | | | | ||| |||| ||| || | || |
Db      62 GCCTA--
CTGGAGTGCTGAAGTAGGCGCGGACGTGCCCCGGTGCCTGGCGCGTGGTAGC-A 118

Qy      111
AACATCCCTTGCATTTGGCTGCAAAGAAATCTGCTTGAAGAAGGGGTTACGCTGTTTGG 170
          | || ||| | | || |||| | | | | | | | | | |
||
Db      119 GGCGCCCGGTGCCCCGGCCGGCGAAGACCATGGCGTTCATGGTGAAG--

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ACCATGGTGGG 176

Qy 171 CCGGGCAGAACTCCGCTGAGCAGAACTTGCCGCC-AGAATGCTCC-----  
TCCTGTTGC 224

| | | | | | | | | | | | | | | | | |

|  
Db 177 -CGGCCAG-----  
CTGAAGAACCTCACTGGGAGCCTGGGAGGCGGCGAGGATAAGGGAGA 230

Qy 225 TGAGTATCA-TCGTCCTCCACGTCGCGGTGCTGGTGC----TGCTGTTCG-----  
TCT 272

| | | | | | | | | | | | | | | | | |

| |  
Db 231  
TGGGGACAAGTCGGCAGCCGAAGCTCAGGGCATGAGCCGGGAGGAGTACGAGGAGTATCA 290

Qy 273 ----CCACGATCGT----CAGCCAATGGATCGTGG-GCAATGGACACGCAACTGAT--  
CT 321

| | | | | | | | | | | | | | | | | |

|  
Db 291 GAAGCAAC--  
TCGTGGAAGAGAAGATGGAGCGGGATGCACAGTTCACACAGAGGAAGGCA 348

Qy 322 ---CTGGCAGAACTGTAGCACCTCTTCC---TCAGGAAATGTCCACC----  
ACTGTTTCT 371

| | | | | | | | | | | | | | | | | |

|  
Db 349  
GAGCGGGCCACACTGCGGAGCCACTTCCGAGACAAATACCGGCTACCCAAGAACGAGACA 408

Qy 372 CATCATCACAAA--CGAATGGC---TGCAGT-----CTGTC-----  
CAGGCCACC 412

| | | | | | | | | | | | | | | | | |

Db 409  
GATGAGAGCCAGATCCAGATGGCAGGTGGAGACGTGGAGCTGCCCCGGGAGCTGGCCAAG 468

Qy 413 ATGATCCTGTCGATCATCTTCAGC-----  
ATTCTGTCTCTGTTCTGTTCTTCT 461

| | | | | | | | | | | | | | | | | |

| |  
Db 469 ATGATCGAGGAGGACA----  
CAGAGGAGGAGGAGGAGAAGGCCTCAGTCCTTGGGCAGCT 524

Qy 462 -GCCAACTCTTC-----ACC----CTCAC-CAAGG----  
GGGGCAGGTTTTACATC 502

| | | | | | | | | | | | | | | | | |

|  
Db 525 GGCCAGC-CTTCCTGGCTTGAACCTGGGCTCACTCAAGGACAAGGCCCAGG-----  
CCAC 578

Qy 503 ACT--GGAATCTTCCAAATTCTTGCTGGTCTGTG---CGTGATGAGT--  
GCTGC-----G 550

| | | | | | | | | | | | | | | | | |

|  
Db 579 ACTGGGGGATCTCAAGCAATC-  
AGCTGAGAAGTGTACGTCATGTGACCACTTCCCCGGG 637

Qy 551 GCCATCTACACGGTGAGGCACCCGGAGTGGC-----ATCTCAACT--CGG-----  
ATT 596

| | | | | | | | | | | | | | | | | |

|  
Db 638  
GTTACCCACTGGGCTGGGCCCCCATGAGGGCTAAGAGTGTGTCAACTTCCAGGGACCCAT 697

Qy 597 ACTCC-TACG-----GTTTCGC---CTACATCCTGG--CCTGGG---  
TGGCCTTC--- 637  
|||| | | |||| | | |||| | || | | || |

Db 698  
ACTCCATTTGGGGCTTTGTTTCCCTTGCCCCATCCTAGTTCCAAGACCTTTCCCATCCAT 757

Qy 638 -CCCCTGGCC-----CTTCTCAGC--GGTG-----  
TCATCTAT 667  
|||| || | |||| || || | || ||

|  
Db 758  
GCCCCAAGCCTATCTTCTGGTTTCTTCCTCTCCGCTGGGAGTAAAGTCCCCATCTTCACT 817

Qy 668 GTGATCTTGC GAAACGC-----GAATGAGG----  
CGCCCA----- 699  
| ||| ||| | | | |||| | ||||

Db 818  
CTACCCCTTCAGGACCCTCCCCACCAGCTCAGCCTGTGGAGGCCTCCCAAGATTGTAGGAA 877

Qy 700 ---GACGGTCTGTCTGAGGCTCTGAGC----  
GTACATAGGGAAGGGAGGAAGGGAAAACA 752  
| | || ||| ||| || | || | | |||| |

|||  
Db 878 TAGGCCCATCCCTCTCTGGCCATGGCCCCAAGTTCCTGCACACAGGAGCA----  
CCCACA 933

Qy 753 GAAAG-CAGACAAAGAAAAAAGAG---CTAGC-----CCAAAATCC-  
CAAACCTCA 797  
|| || || ||| || | | | || || || || || || ||

||  
Db 934  
GAGAGACACACACAGGACACAAAACCCCTGGCACGTTTCAGAGACAGAAGCCACAGACACA 993

Qy 798 AACCAAACCAAACAGAAAGCAGTGGAGGTGGGGGTTGCTG-  
TTGATTGAAGATGTATATA 856  
|| | || |||| | || |||| | | | ||| || |

|  
Db 994 TCCCGGCACAGACAGACA-CACACGAGGC-----CAGCTCCCTTGC----  
GTGTCCA 1040

Qy 857 ATATCTCCGTTTATAAAACCTATTTATAAACT-----  
TTTTACATATATGTAC 906  
|||| | | ||| | |||| | || || || || ||

|  
Db 1041 GCCCCTCCAG---  
ACACCACCACTCAGAACTCTGAGAGAGAGCATGGGCAGACACCCTC 1097

Qy 907 ATAGTATTGTTTGCTTTTTATGTTGACCA---  
TCAGCCTCGTGTGAGCCTTAAAGAAGT 963  
| | | || | ||| ||| || ||| | ||| | ||||

Db 1098 AGCAGACAGGAGGC---CTGAGTT--CCAGTCTCCACCTT-  
TATTGTTCTTGAAAGCCCC 1151

Qy 964 AGCT---AAGGAACCTTTACATCCT-AACAGTATAAT---  
CCAGCTCAGTATTTTTGTTTT 1016  
||| || ||| || | | |||| || | || || | |

Db 1152  
TGCTCTCTCTGAGCCTTATTTTCATCATCTGTAAATGGGAATGTCCTGAATGACTTCTAA 1211

Qy 1017  
GTTTTTTGTTTGTGTTTTGTTTTACCCAGAAATAAGATAACTCCATCTCGCCCCTT-- 1074  
| | | | | | | | | | | | | | | | | | | | | |

Db 1212 GGCTCTTTCTGGCTTGAAGTGT-----CAGAGCCAAGC-----  
CCACATCCCTCCTTGG 1260

Qy 1075 CCCTTTTCATCTGAAAGAAGATACCTC--CCTCC--CAGT--CCAC-----  
CTCATTTAG 1122  
| | | | | | | | | | | | | | | | | | | | | |

Db 1261 GCAGGGCAGC----AGCTGCTGCCACAGCCTCCAGCGGCTGCCACTGTGGGCTC----  
TG 1312

Qy 1123 AAAACCAA-----GTGTG---  
GGTAGAAACCCCAAATGTCCAAAGCCCTTTTCTG 1171  
| | | | | | | | | | | | | | | | | | | | | |

Db 1313  
GGAGCCGGAGCGATGCTGTGTGAGAGGCAGAGTGCCAAGGATGAAGCTGGCACTGAACAG 1372

Qy 1172 GTGGGTGACCCAGTGCATCCAACAGAAACA--GCCGCTGCCCGAACCTCTGTG--  
TGAAGC 1228  
| | | | | | | | | | | | | | | | | | | | | |

Db 1373 TAAGCGGCTCCAG-GCCTCCTCTGGGCCCAGGGCC-CAGCC--  
AATTTCTGTTCTGTTCC 1428

Qy 1229 TTTA-  
CGCGCACACGGACAAATGCCCAAAGTGGAGCCCTTGCAAAAACACGGCTTGTGG 1287  
| | | | | | | | | | | | | | | | | | | | | |

Db 1429 TGTAGAACGCTCTCTG----GATTCCATAGCTGG-----  
AATCTCCTCTCTTAG 1473

Qy 1288 CATTG-GCATACTTGCCCTTACAGGTGGAGTATCTT-  
CGTCACACATCTAAATGAGAAAT 1345  
| | | | | | | | | | | | | | | | | | | | | |

Db 1474 CTCAGTGAAAAATAAAATCCCAAATGGTGTGCCTACCTTCCCACTTCTTACTG-  
GCTTC 1532

Qy 1346 CAGTGACAACAAGTCTTTGA---AATGGTGCTATGGATTTACCAT-----  
TCCTTA 1393  
| | | | | | | | | | | | | | | | | | | | | |

Db 1533 CAG-----  
GAGTCTTGAGATTATAGCCCCCGAGCCTGCCTTAAAGGGGTGTCCT-- 1583

Qy 1394 TTATCACTAATCATCTAAACAAC-TCAGTGA-----AATCCAAT-----  
TA 1434  
| | | | | | | | | | | | | | | | | | | | | |

Db 1584 ---CCACCCCCACCT--  
ACAGCTTCACAGGAGGGGAGAGGGCATCCAGTGCTAGGAGTA 1638

Qy 1435 ACAATTTTACAACATAAGATAGAATGGAGACCTGAATAAT-----TCTG-----  
TG 1480  
| | | | | | | | | | | | | | | | | | | | | |

| |

Db 1639  
GAAGTGTCTCCAGCTCTGTTCTCTTGGGGCCCTGGGTGAAGGTGGGGTCTGGGGCTTATG 1698

Qy 1481 TAATATAAATGGTTTAT-----AACTGC----TTTTGT-----  
ACCT 1513  
|||  
|||

Db 1699  
AAATAGGTCTGGGCTTTGAGGAGGATGGAGCAGCCTCATTATGTGGGGAAGATGGGGCCT 1758

Qy 1514 -----  
AGCTAGGCTGCTATTATTACTATAATG 1540  
||| | | | | | | |

Db 1759 CTGGGGCGTCACTGAGACCACAGGTGGGGCCGGGGCTGGACCGC-----  
AGCTGTCTTG 1812

Qy 1541 AGTAAATCATAAAGCCTTCATCACTCC-  
CACATTTTTCTTACGGTCGGAGCATCAGAACA 1599  
|| | | | | | | | | | | | | | | | | | |

Db 1813 GGTGCCT----GTGCCTGCACCCCTCCTCAC-----CCTAGAGACGGAAGAT--  
GTGCA 1860

Qy 1600 AGCGTCTAGACTCCTTGGGACCGTGAGTTCCTAGAGCTTGGCTG---GGTCT---  
AGGCT 1653  
| | | | | | | | | | | | | | | | | | |

Db 1861 AAAAGAAAGAAGGAAGGGCAAC-TGCATTCC-  
AGCCCCACACTGTGATGACTTTGAGCCT 1918

Qy 1654 GTTCTGTGCCTCCAAG-GACTGTCTGGC-----AATGACTTGT---  
ATTGGC 1696  
| | | | | | | | | | | | | | | | | | |

Db 1919  
GTCCTTTCCCTCCTTGAGCCTGTCTTGCTTGCTCCCTGTAAATGAACAGTCCCCCTCTC 1978

Qy 1697 CACCAACT-----GTAGATGTAT-ATATGGTGCCC--TTCTGATGC-TAAGAC--  
TCC 1743  
| | | | | | | | | | | | | | | | | | |

Db 1979  
CCCCAAATAGTAATAATACATGTTTCAAAGGGTGACCATTTATAAAGCATATGACAAACC 2038

Qy 1744  
AGACCTTTTGTGTTTGTCTTTGCATTTTCTGATTTTATAACCAACTGTGTGGACTAAGATGC 1803  
| | | | | | | | | | | | | | | | | | |

Db 2039 ATATCAATAAATGTAAC---CA--  
TTCTTTTAAAAAAAAAAAAAAAAAGGCCACATGTGC 2093

Qy 1804 ATTAAATAAACATCAGAGTAACT 1827  
| | | | | | | | | | | | | | | | | | |

Db 2094 -TCGAGCTGCAGGTCGCGGCCGCT 2116

RESULT 8  
US-10-478-914-20  
; Sequence 20, Application US/10478914



GCCAGAATGCT 213  
 |||| | | | | | | | |  
 Db 300  
 AACTGATGCCTGGAAAGAAGGGCAATTCAAAGATATCATTACCAAGGTTGCCAATGTGGA 359

Qy 214 CCTCCTGTTGCTGAGTATCATCGTCCTC-----  
 CACGTCGCGG----- 251  
 | | | | | | | | | | | | | |  
 Db 360 ACT-  
 ATACTACAGAGCAATACAGTTCTACTTAGAATTCAAGCCTCTGTTGTTAAATGATT 418

Qy 252 TGCTGGTGCTGCTGTTTCGTCTCCACG-----ATCGT-  
 CAGCCAATGGATCGTGG 299  
 |||| | | |||| | |||| |||| | | | |  
 Db 419 TGCTGATGGTGCT---GTCTCCACGGTTGGATCACACTCGTGCAGTCAATTATT--  
 TCA 472

Qy 300 GCAATGGACACGCAACTGATCTCTGGCAGAACTGTA---GCACCTCTTCC--  
 TCAGGA-A 353  
 |||| | | | | | | | | | | | | | | | |  
 Db 473 GCAA-GGTTAAACAGCT-ACCACTGGTGAAACCGTATTTGCG---  
 TTCAGTTCAGAACC 526

Qy 354 ATGTCCACCA--CTGTTTCT-CATCATC-ACCAAACGAATGGCTGCAG-----  
 TC 399  
 | | | | | | | | | | | | | | | |  
 | |  
 Db 527  
 ATAACAACAAATCTGTGAATGAATCATTGAACAATCTTTTTATTACAGAAGAAGATTATC 586

Qy 400 TGTCCAGGCCACCAT-----GATCCTGTCGATCATCTTCAGCATTCTGTCTC-  
 TGTTTC-- 451  
 | | | | | | | | | | | | | | | | | |  
 Db 587 AGGCTCTGCGAACATCAATAGATGCTTATGA-  
 CAACTTTGACAATATCTCGCTTGCTCAG 645

Qy 452 -----CT-----GTTC-----TTCTGC-  
 CAACTCTTC----- 472  
 | | | | | | | | | | | | | | | |  
 Db 646  
 CGTTTGAAAAACATGAACTCATTGAGTTCAGGAGAATTGCTGCTTATCTCTTCAAAGGC 705

Qy 473 -ACCCTCAC-----CAAGGGGGGCAGGTTTTACAT-----  
 CA 503  
 | | | | | | | | | | | | | | | |  
 | |  
 Db 706  
 AACAATCGCTGGAAACAGAGTGTAGAGCTGTGCAAGAAAGACAGCCTTTACAAGGATGCA 765

Qy 504 CTGGAATCTTC--CAAATTCT-----TGCTGGTCTGTGCGTGATGAG-  
 TGCTGCGGCCAT 555  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 766 ATGCAGTATGCTTCTGAATCTAAAGATACTGAATTG-GC-  
 TGAAGAACTCCTGCAGTGGT 823

Qy 556 CTACACGGTGAGGCACCCGGAGTG-GCATCTCAAC---TCGGATTA-  
 CTCCTACGGTTTC 610  
 | | | | | | | | | | | | | | | | | |  
 |

Db 824 TTTTGCAG-  
 GAAGAAAAAAGAGAGTGCTTTGGAGCTTGTCTGTTTACCTGTTACGATCTT 882

Qy 611 -----GCCT----ACATCCTGG--CCTG---GGTGGCC-----  
 TTCCCCCTG 643  
 ||| | |||| | ||| || ||| || ||

Db 883  
 TTAAGGCCAGATGTCGTCCTAGAACTGCATGGAGGCACAATATCATGGATTTTGCCATG 942

Qy 644 GCCCTTCTCAGCGGTGTCTATCTATGTGATCTTG-----  
 CG 678  
 || | ||| | |||| | | | ||||

Db 943  
 CCCTATTTTCATCCAGGTCATGAAGGAGTACTTGACAAAGGTGGATAAATTAGATGCTTCA 1002

Qy 679 GAAACGCGAATGAGGCGCCAGACGGTCTGTCT---  
 GAGGCTCTGAGCGTACATAGGGAA 735  
 ||| | | |||| ||| | | || ||| | | | | |

Db 1003 GAATCAC---  
 TGAGAAAAGAAGAACAAGCTACAGAGACACAACCCATTGTTTATGGT 1059

Qy 736 GGGAGGAAGGGAAAAACAGAAAGCA-  
 GACAAAGAAAAAAGAGCTAGCCCAAATCCCAAAC 794  
 | || | | || |||| ||| || || ||| ||||

Db 1060 CAGCCCCAGTTGATGCTGACAGCAGGACCCAGTGT----TGCCGTCCCTC---  
 CCCAGGC 1112

Qy 795 TC-----AAACCAAACCA-----AACAGAAAGCAG--  
 TGGAGGTGGGG 830  
 | | ||| |||| |||| | ||| |||

Db 1113 ACCTTTTGGTTATGGTTATACCGCACCACCGTATGGACAGCCA-  
 CAGCCTGGCTTTGGGT 1171

Qy 831 GTTGC-TGTTGATTGAA--GATGTATATAATATCTCCGGTTT-----  
 ATAAAACCTATTT 882  
 || ||| |||| | || | || ||| | |||| |

Db 1172  
 ACAGCATGTGAGATGAAGCGCTGATCCTGTAGTCACCTATTTTCGTAAGTAAACATCGTC 1231

Qy 883 ATAACACTTTTTTACA---TAT-ATG-----  
 TACATAGTATTGTTTGCTTTTT 925  
 | || | || || ||| ||| || | | |||| ||||

Db 1232  
 TTTACCCACTTCTCAGTTTATAATGGGGGAAAACAGGCAACGTGTTCTTGTAACCTTTAT 1291

Qy 926  
 ATGTTGACCATCAGCCTCGTGTTGAGCCTTAAAGAAGTAGCTAAGGAACTTTACATCCTA 985  
 | ||| | | | |||| ||| | | ||| |

Db 1292  
 TTCATGAAGGACTTCTTTTTGTTTCTAACTATAAACTTGGATCACCTATGTTAAAACCTT 1351

Qy 986 ACAGTATAATCCAGCTCAGTATTTTTGTTTTGTTTTTGTGTTG---TTTGTTT---  
 TGTT 1039



||||  
 Db 1352 ATTTACATTCCACATC---  
 ATTTTAGAATTTATTTTCGAAGGGAATAGTTTCAATGTT 1408  
  
 Qy 1040 TTACCCA---GAAATAAGATAACTCCATCTCGCCC-----CTTCCC----  
 TTTTCAT 1083  
 ||| || | | | ||| ||| | || | | ||  
 ||  
 Db 1409  
 TTATTTCACTTGGGCTTTTTTCTTCCCCCTCTTTCTTTAAAGAACTGCTCAATATTCAAT 1468  
  
 Qy 1084 CTG-AAAGAAGATACCT-----CCCTC-----CCAGTCCAC-  
 CTCAT 1118  
 ||| ||||| |||| | ||| | | ||||  
 ||  
 Db 1469 CTGTTGTGAAGA-  
 ACCTGATTTGCACTCTGTAGTGTTTAAAGAAACAAAGAACTCTAAT 1527  
  
 Qy 1119 TTAGAAAACC-----AAAGTGTGGGTAGAAACC--CCAA-----  
 TGTCCAAAAGCC 1163  
 | ||| | |||| ||| | | | |||| |||| |||  
 ||  
 Db 1528  
 ATTGAATCTCTTAAATTTAGTGTATGTAAACAGCTTACAAATACGTATTGTCTAAATGCA 1587  
  
 Qy 1164 -----CTTTT-----  
 CTGGTGGGTGACC----- 1181  
 || || |||| |||||  
 Db 1588  
 TTTAAATCTGTTTTATTCAAAGAAAAGCTAAAGCAAAAACACTGGCATATGACCATGCAA 1647  
  
 Qy 1182 -----CAGTGCATCCAACAGAAACAGC---CGCTGCCCCGAAC---CTCTG---  
 TGTGA 1225  
 ||||| ||||| | ||| | || | | | ||| ||  
 Db 1648 GACTGTCAAGTG---CCAACAAAGACAACACTAATCAGCAC-  
 ATCGTACACTGGATTGCAG 1703  
  
 Qy 1226 AGCTTTTAC-----GCGCAC----ACGGACAAAATGCCCAA-----  
 ACTGGAGCCCTT 1268  
 |||| | | | ||||| |||| | | ||||  
 Db 1704  
 TGCTTCCCAGATTATTGAAAAATGTTACAGACAACCTGCCTGATTTTTTAAATGAGC---- 1759  
  
 Qy 1269 GCAAAAACACGGCTTGTGGCATTGGCATACTTGCCC---TTACAGGTGG-----  
 AGT 1317  
 | |||| | | | | ||| |||| | || | |  
 |||  
 Db 1760 GTAAAAG---  
 GCCCTCTAACCTATGCAGGTTTCCCCATTATGCATATAGAAAATGCTAGT 1816  
  
 Qy 1318 ATCTTCGTACACATCTAAATGAGAAATCAGTGACAACAAGT----  
 CTTTGAAATGGTGC 1373  
 || || | ||| || || | || ||| | || | |||  
 ||||  
 Db 1817 ATGTTTTGCTCACTTC---ATATGTAACAGGTGCCCTTATGTTGTGCTGTATCCT-  
 GTGC 1872  
  
 Qy 1374 TATGGATTT---ACCATTCCTT-----  
 ATTATCACTAATCATCTAAAC----- 1413

Db 1873  
 TTTTCTGTGGGACCATTCCATTTCAGGAGCAAAGAGCACCATTCCAATCTTGTGTGT 1932  
 Qy 1414 -----AAC---TCACTGGAAAT---CCAATTAACAATT-----  
 TTAC-- 1444  
 Db 1933  
 GTTTACTAACCTTCCCTGAGGTTTGTGTATGTTGGATATTGTGGTGTTTTAGATCACTG 1992  
 Qy 1445 ----AACATAAGATAGAATGGAGACCTGAATAATTCTGT-----  
 GTAATATAAATGG-- 1492  
 Db 1993  
 AGTGTACAGAAGAGAGAAATTCAAACAAAATATTGCTGTTCTTCAGTTTTGTTTGTGGAA 2052  
 Qy 1493 TTTATAACTGCT----TTT---GTACCTAGCTAGGCTGCTATTATTAC-TATAAT--  
 GAG 1542  
 Db 2053  
 TTTGAAATTACTCAAATTTAAATAAATTACTGGACTGTGGAAATAACATAGAATTGAAG 2112  
 Qy 1543 TAAATCATAAAGCCTTCATCACTCCAC-----  
 ATTTTCT--- 1578  
 Db 2113 TTTTAATTAAATAC-----  
 CACTCAAACGAAAAGAACAGTAGTTTTTGTAGTTTTTATATT 2167  
 Qy 1579 ---TACGG-----TCGG--AGCATCAGAACAAGCGTCTAGACTCCTTGGGACC-  
 GTGAG 1626  
 Db 2168 GGATACTGAGGCATTAGGGAGGCATGAAAGGAAGAGGAATGA-  
 GGATTGAGACATGTGAA 2226  
 Qy 1627 TTCCTAGAGCTTGGCTGGGTC--TAGGCTGTTCTGTGCCTC-----  
 CAAGGACTGTCTGG 1679  
 Db 2227 GACATTGTGCAT---TATATCAATGTGCATTCTGTAGTTCATTAAACAAGGT---  
 ACATG 2280  
 Qy 1680 CAAT-GACTTGTATTGGCCA-----CCAAGTGTAGATG-----  
 TATATATGGTGCCC 1725  
 Db 2281 CAATAGTCT--  
 AAAGAACCAGAGTCACTACTATAGTGGCTTAACATTTAATCTGTCTCCA 2338  
 Qy 1726 TTCTGAT-GCTAA--GACTCCAGACCTTTTGTGTTTTGCTTTGCATTT-----  
 TC 1771  
 Db 2339  
 ATATTTTAACCAAGTGACACCGGGGTTTTTATCGAAGCATTTCACTTAAATGAACAAATC 2398  
 Qy 1772 T--GATTTTATACCAACTGTGTGGACTAAGATGCATTAAAA----  
 TAAACATCAGAGTAA 1825

||  
Db 2399 ATGGCTGTTATATTAAC---  
TGAAATAAAATATATTTAAACATGTAAAAAAAAAAAAA 2455

Qy 1826 -----CTC 1828  
|||  
Db 2456 AAAGGCCACATGTGCTC 2472

RESULT 9  
US-10-478-914-64/c  
; Sequence 64, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 64  
; LENGTH: 2120  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-64

Query Match 38.8%; Score 4211; DB 1; Length 2120;  
Best Local Similarity 43.9%; Pred. No. 4.9e-276;  
Matches 994; Conservative 0; Mismatches 669; Indels 602;  
Gaps 139;

Qy 5 TACAGGGAGCACCACCAGGGAACATCTCGGGGA-----  
GCCTGGTT----- 45  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2119 TCTAGCGGCCGCGACCTG----  
CAGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTAA 2064

Qy 46 --GGA--AGCTGCA-----GGCTTAGTCTGTGCGGCTGCGGGTCTCTGACTG----  
CCCT 91  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 2063 AAGAATGAGTTACATTTATTGATATGGTTTGTTCATATGC---  
TTTATAAATGGTCACCCT 2007

Qy 92 GTGGGGAGGGTCTTGCCTTAACATCCCTTGC-  
ATTTGGCTGCAAAGAAATCTG----- 143  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2006 TT-----GAAACATGTATTA-----  
TTACTATTTGGGGGAGAGGGGACTGTTTCAATTT 1959

Qy 144 -----CTTGGAAGAAGGGGTTACGCT--GTTTGGCCGGGCAGAAACTC--  
CGCTGA 190  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 1958  
TACAGGGGACAAGCAAGACAGGCTCAAGGAGGGAAAGGACAGGCTCAAAGTCATCACAGT 1899

Qy 191 GCAGAACTTGCCGCCAGAATGCTCCTCCTG-----  
TTGCTGAGTATCATCGTCCTCCACG 245  
| | | | | | | | | | | | | | | | | | |

|  
Db 1898 GTGGGGCTGGAATGCAG-  
TTGCCCTTCCTTCTTTCTTTTTGCACATCTTCCGTCTCTAGG 1840

Qy 246 TCGCGGTGCTGGTGCTGCTGTTC-  
GTCTCCACGATCGTCAGCCAATGGATCGTGGGCAAT 304  
| | | | | | | | | | | | | | | | | | |

Db 1839 GTGAGGAG-GGGTGCAG--GCACAGGCACCCAAGACAGCTGC----GGTCC---  
AGCCCC 1790

Qy 305 GGACACGCAACTGATCTC--TGGCAGAACTGTAGCACC-  
TCTTCCTCAGGAAATG----- 356  
| | | | | | | | | | | | | | | | | | |

Db 1789  
GGCCCCACCTGTGGTCTCAGTGACGCCCCAGAGGCCCATCTTCCCCACATAATGAGGCT 1730

Qy 357 -----TCCACCACTG-----  
TTTCTCATCATCACCAAACGAATGGCTGCAGTCT 400  
| | | | | | | | | | | | | | | | | | |

||  
Db 1729 GCTCCATCCTCCTCAAAGCCCAGACCTATTTTCATAAGCCCCAGAC-----  
CCCACCTTC- 1676

Qy 401 GTCCAGGCCACCA--TGATC----CTGTCTGA-TCATCTTC----AGCATT-----  
CTGTC 444  
| | | | | | | | | | | | | | | | | | |

||  
Db 1675  
ACCCAGGGCCCCAAGAGAACAGAGCTGGAGACACTTCTACTCCTAGCACTGGATGCCCTC 1616

Qy 445 TCTGTTTCTGTTTCTTCT-----  
GCCAACTCTT----- 471  
| | | | | | | | | | | | | | | | | | |

Db 1615  
TCCCCTCCTGTGAAGCTGTAGGTGGGGGGTGGAGGACACCCCTTTAAGGCAGGCTCGGGG 1556

Qy 472 -----CACC----CTC-----ACCA-----AGGGGGGCAGGTT-TTACATCA-  
CT 505  
| | | | | | | | | | | | | | | | | | |

|  
Db 1555  
GGCTATGAACTCCAAGACTCCTGGAAGCCAGTAAGAAGTGGGAAGGTAGGCACACCATTT 1496

Qy 506 GGAATCTTCCAAATTCTTGCTGGTCTGTGCGTGATGAGTGCTGC---GG---  
CCA----- 554  
| | | | | | | | | | | | | | | | | | |

Db 1495 GGGATTTTTATTTTC--  
ACTGAGCTAAGAGAGGAGATTCCAGCTATGGAATCCAGAGAG 1438

Qy 555 ---TCTACACGGTGAGGCACCCGGAGTGGC----  
ATCTCAACTCGGATTACTCCTACGGT 607  
| | | | | | | | | | | | | | | | | | |

||



Db 940 GTCTCTCTGTGGGTGCTCCTGTGTGCAGG-  
AACTTGGGGCCATGGCCAGAGAGGGATGGG 882

Qy 1069 CCCCTTCC--CTTTCAT-----  
CTGAA-- 1088  
|| |||| | || | ||||

Db 881  
CCTATTCTTACAATCTTGGGAGGCCTCCACAGGCTGAGCTGGTGGGGAGGGTCCTGAAGG 822

Qy 1089 -----AGAAGAT----ACCTCCCTCCCAG-----  
TCCA----- 1112  
||||| || | ||||| |||

Db 821  
GTAGAGTGAAGATGGGGACTTTACTCCCAGCGGAGAGGAAGAAACCAGAAGATAGGCTTG 762

Qy 1113 ---CCTCATTTAGAA-----AACCAAAGTGTGGGTAG-----  
AAACCCCAAATG 1153  
| | | ||| ||| | || || || |||  
|||||||

Db 761  
GGGCATGGATGGGAAAGGTCTTGGAAGTAGGATGGGGCAAGGGAAACAAAGCCCCAAATG 702

Qy 1154 TC-CAAAAGCCCTTTTCTGGTGGGTGACCCAGTGCAT--  
CCAACAGAAACAGCCGCTGCC 1210  
| | || |||| | |||| || | | || || ||| |  
|||

Db 701 GAGTATGGGTCC----CTGGAAGTTGACACACT-CTTAGCCCTCATGGG-GGCC-  
CAGCC 649

Qy 1211 CG-----AACCTCTGTGT----  
GAAGCTTTACGCGCACACGGACAAAATGCCCAAAGT 1260  
| |||| | | | | | |||| | ||| |

||  
Db 648 CAGTGGGTAACCCCGGGGAAGTGGTCACATGACGTG-ACAC-----TTCTC-  
AGCT- 600

Qy 1261  
GAGCCCTTGCAAAACACGGCTTGTGGCATTGGCATACTTGCCCTTACAGGTGGAGTATC 1320  
|| |||| | | | ||||| ||| |||| |||| ||||

Db 599 GATTGCTTGAGATCCCCAG--TGTGGCCTGGGC---CTTGTCCTT-----  
GAGTG-- 554

Qy 1321  
TTCGTACACATCTAAATGAGAAATCAGTGACAACAAGTCTTTGAAATGGTGCTATGGAT 1380  
| | ||| ||| | | | ||| | | | ||| |

|  
Db 553 --AGCCCAGGTTCAAGCCAGGAAGGCTG-GCCAGC-TGCCCAAGGACTGAGGCCTT--  
CT 500

Qy 1381 TTACC-ATTCT--TATTATCACTAATCATC-TAAACAACCTCACTGG--  
AAATCCAATT 1433  
|| |||| | | || ||||| | || ||| | || | ||||

|  
Db 499  
CCTCCTCCTCCTCTGTGTCCTCCTCGATCATCTTGGCCAGCTCCCGGGGCAGCTCCACGT 440

Qy 1434  
AACAAATTTTACAACATAAGATAGAATGGAGACCTGAATAATTCTGTGTAATATAAATGGT 1493  
| | | ||| | | | |||| | |||| | |||  
|||

Db 439 CTCCACCTGCCATCTGGATCTGGCTC--TCATCTGTCTCGTTCTTGG----  
GTAGCCGGT 386

Qy 1494 TTATAACT--GCTTTTGTACCTAGC----TAGGCTGCTAT-  
TATTACTATAATGAGTAAA 1546  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 385 ATTTGTCTCGGAAGTGGCTCC--GCAGTGTGGCCCGCTCTGCCTTCCT---  
CTGTGTGAA 331

Qy 1547  
TCATAAAGCCTTCATCACTCCACATTTTTTCTTACGGTCGGAGCATCAGAACAAGCGTCT 1606  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 330 CTGTGCATCC-----CGCTCCATC--TTCTCTTCCACGAGTTGCTTCTG---  
ATACTCCT 281

Qy 1607 AG-ACTCCTTGGGAC-CGTGAGTTCCTAGAGCTT-GGCTG-  
GGTCTAGGC----- 1652  
| | | | | | | | | | | | | | | | | | | | | |  
Db 280 CGTACTCCTCCCGGCTCATG----  
CCCTGAGCTTCGGCTGCCGACTTGTCCCCATCTCCC 225

Qy 1653 ---TGTTCTGTGCCTCCAAGGACTGTCTGGCAATGA----  
CTTGTATTGGCCACCAACTG 1705  
| | | | | | | | | | | | | | | | | | | | | |  
Db 224 TTATCCTCGCCGCTCCAGG-----  
CTCCCAGTGAGTTCTTTCAGCTGGCCGCCACCA 170

Qy 1706 TAG-----ATGTAT-ATATGGT-----GCC-----  
CTTCTGATGCTA- 1736  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 169  
TGGTCTTCACCATGAACGCCATGGTCTTCGCCGGCCGGGGCACCGGGCGCCTGCTACCAC 110

Qy 1737 -----AGACTCCAGAC-CTTTTGTTTTTTGCTT-  
TGCATTTTCTGATTTTATACCAACTGT 1789  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 109 GCGCCAGGCACCGGGCACGTCCGCGCCTACTTCAGCA-CTCCAG----  
TAGGCCAACAGT 55

Qy 1790 GT-----GGACTAAGATGCATTAAAATAAACATCAG-AGTAACTC 1828  
| | | | | | | | | | | | | | | | | | | | | |  
Db 54 GCTCGAGGAATTCCGCAGCTTTTAG-----AGCAGAAGTAACAC 16

RESULT 10

US-10-478-914-17/c

; Sequence 17, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 17  
; LENGTH: 2198  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-17

Query Match 38.6%; Score 4192; DB 1; Length 2198;  
Best Local Similarity 44.3%; Pred. No. 1.3e-274;  
Matches 1028; Conservative 0; Mismatches 655; Indels 640;  
Gaps 141;

Qy 3 GTTACAGGGAGCAC---CACCAGGGAAC-----  
ATCTCGGGGAGC 39  
| | | | | | | | | | | | | | | | | | | | |

||  
Db 2198  
GCGACCTGCAGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTTTTTTTATGGTGC 2139

Qy 40 CTGGTTGGAAGCTGCAGGCTTAGTCTGTCGGC--TGCGGGT--  
CTCTGACTGCCCTGTG- 94  
| | | | | | | | | | | | | | | | | | | | |

|||  
Db 2138 CAATTTTAAA-----TAGTTTTATTT-  
AAGACATTGCATTTTCCACTTACAATACAGTGT 2085

Qy 95 -----GGGAGGGTCTTGCCTTAACATCCCT-  
TGCATTTGGCTGCAAAGAAATCTGC 144  
| | | | | | | | | | | | | | | | | | | | |  
Db 2084 TTATAAAGTGCAATGTTATTTCTTC---CCCTGTGCATATG--TTCCA--  
TATTCAAG 2033

Qy 145  
TTGGAAGAAGGGGTTACGCTGTTTGGCCGGGCAGAACTCCGCTGAGCAGAACTTGCCGC 204  
| | | | | | | | | | | | | | | | | | | | |  
Db 2032 TATTGAGAA-----TGCC---CAGTAACTTACTATAGCAG--  
CTTAACTT 1993

Qy 205 CAGAATGCTCCTCCTG---TTGCTGAGTATCATCGTCCTCCACG-----  
TCGCGGTGCTG 256  
| | | | | | | | | | | | | | | | | | | | |  
||  
Db 1992 TTTAAACTGCCACAGAATTTGCTACGAATTTAGGTCCTTCAAATGTTTTAAATGTG-  
TG 1934

Qy 257 GTGC--TGCTGTTGCTCTCCAC--GATCG-----TCAGCCAATG-  
GATCGTGGGCAATG 305  
| | | | | | | | | | | | | | | | | | | | |

||  
Db 1933 GAACAATGC--  
TACATCTACACTTGGTTGGCTTAATCAACCTCTTCAATGGTGGGCCCTG 1876

Qy 306  
GACACGCAACTGATCTCTGGCAGAACTGTAGCACCTCTTCTCAGGAAATGTCCACCACT 365  
| | | | | | | | | | | | | | | | | | | | |



Db 1875 AGGAAGCAC-----CACCAGAGGGA--GGAGCTCCAC--CACCAGGAAA--  
TCCCCCAGG 1827

Qy 366  
GTTTCTCATCATCACAAACGAATGGCTGCAGTCTGTCCAGGCCACCATGATCCTGT--- 422  
||| | || | ||| || | | | | || | ||

Db 1826 CATTG-----CTCCTGGC--ATGCCTCCTG-  
CACTCTGGTACAGCTTGGTGATGATGG 1777

Qy 423 -----CGATC-ATCTTCAGCATTCTGTCTCTGTTTCCTGTTC---  
TTCTGCCAACTCTTC- 472  
| | | ||| ||| || | ||||| ||||| |||| | |||

Db 1776 GGTTGCAAACCTTCTCCAGC--TC--  
TTTCTGTTGATGTTCAAATTCTTCCTTCTCAGCA 1721

Qy 473 -----ACCCTCACCAAGGGGGGCAGGTT-----TTACAT--  
CACTGGAATCTTCCAAATT 520  
| || | ||| || ||| || ||| |||| | |||| |

Db 1720 GTCTGATTCTTATCAA-----GCCAGTTGATAATTTCACTTACTTG-----  
TCCAGAAT 1671

Qy 521 CTTGCTGGT----CTGTGCGTGATGAGTGC--TGCGG---CCATCTAC-  
ACGGTGAGGC 569  
||| ||| | || ||| | ||| || | |||| | || ||

Db 1670 CTT-  
CTGTTTGTCTCATCGTTAATCTTGCCCTTGAAGTTTCTCATCTTCAACAGTTGCTT 1612

Qy 570 ACCCGGAG-TGGCAT----CTCAA-----CTCGGATTACTCCT-----  
ACGGTTTTCG 611  
| | | |||| |||| || |||| || ||| | |

Db 1611  
TCATGTTGAAGGCATAGGACTCAAGTGAATTCTTGATGACACCTTGTCCTCTGCTTCT 1552

Qy 612 C-----CTACATCCTGGCCTGGGTG-----GCCTTCC---  
CCCT 642  
| | | |||| | | |||| |

Db 1551  
CATCTTCAGCTTTGTACTTCTCAGCTTCTGGACCATACGTTCAATGTCTTCCTTGCTCA 1492

Qy 643 ---GGCCCTTCTCAGCGG-----TGTCATCTAT---GTGATCTTG----  
CGG 679  
|||||| || | ||| ||| | || |||| |

Db 1491  
AACGGCCCTTGTCATTAGTGATAGTAATCTTGTTCTCTTTTCCCGTACTCTTGTCACAG 1432

Qy 680 AAACGCGAATGAGGCGCCCA--GACGGTC--TGTC---TGAGGC-----TCTGA-  
GCGTA 726  
| | | |||| ||| | | ||| | | | |||| |

Db 1431 CAGAGACATTGAGTATACCATTGGC-  
ATCAATGTCAAAAGTGACTTCAATCTGAGGAACA 1373

Qy 727 CATAGGGAAG--GGAGGAA-----GGGAAAACAGA-----AAGCAG-----  
ACAAA 765  
| | ||| | |||| | | || ||| |||| |

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Db 1372
CCTCGGGGTGCAGGAGGTATGCCTGTGAGTTCAAACCTTGCCAAGCAGGTTGTTATCCTTT 1313

Qy 766 GAAAAAAGA-GCTAGCC--CAAAATCCCAAACCTCAAACCAAACAGAAAG-
CAG-- 819
| | | | | | | | | | | | | | | | | | | | | |
Db 1312 GTCATGGCACGCTCGCCTTCATAAACCTGAA---
TAAGCACACCAGGCTGGTTGTCAGAA 1256

Qy 820 -TGGAGGTGGGGGTTGCTGT---
TGATTGAAGATGTATATAATATCTCCGGTTTATAAAA 875
| | | | | | | | | | | | | | | | | | | | | |
Db 1255 TAGGTAGTGAAGGT--CTGTGCTGCTTGTTAGGAATGGTGGTAT-
TACGCTTGATGAGG 1199

Qy 876 CCTATTTATAACAC-----TTTTTACATATATGTACATAGTATTGTT-----
TG 919
| | | | | | | | | | | | | | | | | | | | | |
|
Db 1198 AC-
AGTCATGACTCCACCAGCAGTTTCAATACCAAGGGAAAGAGGAGTGACATCCAAGAG 1140

Qy 920 CTTTTTATGTTGACCA---
TCAGCCTCGTGTGAGCCTTAAAGAAGTAGCTAAGGAACTT 976
| | | | | | | | | | | | | | | | | | | | | |
| |
Db 1139 CAGCAAATCTTGAACATTCTCAGACTTGTCTCCAGAC---AAGATG--GCT----
GCCTG 1089

Qy 977 TACATCCTAACAGTATAATCCAGC----
TCAGTATTTTTGTTTTGTTTTTGTGTTGTTG 1032
| | | | | | | | | | | | | | | | | | | | | |
Db 1088 GACAGCTGCACCATAAGCAACAGCTTCATCAGGGTTGATGCTCT-
TATTCAGTT----- 1036

Qy 1033 TTTTGTTTTACCCAGAAATAAGATAACTCCATCTCGCCCCCTTCCCTTTTCAT----
CTGAA 1088
| | | | | | | | | | | | | | | | | | | | | |
Db 1035 -----CTTTTCCATTGAAGAAGT-----
CTTGGAAGAAGCTTCTGAATCTTGGGGATACG 987

Qy 1089
AGAAGATACCTCCCTCCCAGTCCACCTCATTTAGAAAACCAAAGTGTGGGTAGAAACCCC 1148
| | | | | | | | | | | | | | | | | | | | | |
|
Db 986 AGTAGA-
ACCACCAACCAGGACAATATCATGAATCTGTGACTTGTCTAGTTTGGCATCTC 928

Qy 1149 AAATGTCCAAAAGCCCTTTTCTGG----TGGGTGACC-----
CAGTGC 1187
| | | | | | | | | | | | | | | | | | | | | |
|
Db 927 GAAGGGCTTT-----
CTCTACTGGGTCCAGGGTGCCACGGAACAGGTCAGCATTTCAGTTC 873

Qy 1188 ATCCAA-CAGAAAC-----AGCCGCTGCC-----
CGAA 1214
| | | | | | | | | | | | | | | | | | | | | |
| | |
Db 872

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Db              347
CTTCATCTTTGTCAGAACCATAGAAGACACCTCCTCTGGATAGAAGCTTTTGGTCTCTCC 288

Qy             1621 CGTGAGTTCCTAGAGCTTGG--CTGGGTCTAGGCTG-TTCTGT-GCCTCC---
AAGGACT 1673      | ||   |||       ||||  || || |  | | |  ||  | || ||   ||||
|
Db              287 CTTGTATTC-----
TACTTGGACCTTGGGCCTGCCAGCATCATTCACCACCATAAAGGGC- 233

Qy             1674 GTCTGGCAATGACTTGTATTGGCC--
ACCAACTGTAGATGTATATATGGTGCCCTTCTGA 1731
                ||||  | |||  | |    |||  | |    | || ||   ||  ||
||
Db              232 -----
CAATGTTTCATATCAGACTGGACAACAGCATCATCAAATCTGCGTCCAATCAGA 179

Qy             1732 TGCTAAGACTCCAGACCTTTTGTTTTTG-----
CTTTCGATTTTCTGATTTTATAC----- 1782
        | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db              178 CGTTTGGCATCAAAAAC-TGTGTTGGTGGGGTTTCATTGCAACT--
TGATTCTTTGCGGCA 122

Qy             1783 -----CAACTGT---GTG-----
GACTAAGAT----- 1801
                ||||  ||   |||           |||   ||  |

Db              121
TCACCGATCAACCGTTTCAGTGTCCGTAAAGGCGACATAGCTTGGAGTGGTTCGGTTTCCC 62

Qy             1802 -----GCATTAAAATAAACAT-----CAGAGTAAGTC 1828
                |||  | |  | ||  |         | |   |||  |

Db              61  TGATCATTGGCAATTATCTCGACTTTTCCGTGCTGGAAAACAC 19

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Best Local Similarity 42.4%; Pred. No. 3.1e-270;  
Matches 1084; Conservative 0; Mismatches 672; Indels 798;  
Gaps 158;

Qy 1 CAGTTACAGGGAGCAC---

CACCAGGGAAC----- 27

| | | | | | | | | | |

Db 2488

CCGCGACCTGCAGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTACATGTTTAAATA 2429

Qy 28 -----ATCTCGGGG-----AGCC-TGGTTGG-----

AAGCTGCAGGCTTAGTC 64

| | | | | | | | | | | | | | | |

Db 2428

TATTTTATTTCAAGTTAATATAACAGCCATGATTTGTTTCATTTAAGTGAAATGCTTCG-A 2370

Qy 65 TGTCGGCTGCGG-GTCTCT-----GACTG-----

CCCT-- 91

| | | | | | | | | | | | | | |

Db 2369

TAAAAACCCCGGTGTCACCTTGGTTAAAATATTGGAGACAGATTAAATGTTAAGCCACTAT 2310

Qy 92 -GTGGGGA----GGGTCTT--GCCT-TAACA--TCCCTTGCAATTTG-

GCTGCAAAGAAAT 140

| | | | | | | | | | | | | | | | | |

Db 2309

AGTAGTGACTCTGGTTCTTTAGACTATTGCATGTACCTTGTTAATGAAGTAC-

AGGAATG 2251

Qy 141 CTGCTTGGAAGAAGGGGTTACGCTGT-TTGGCCGGGCAGAAAC-----

TCCGCTGAGCAG 194

| | | | | | | | | | | | | | | | |

Db 2250

CACATTGATATAATG---CACAATGTCTTCACATGTCTCAATCCTCATTCCTCT--

TCCT 2196

Qy 195 AACTTGCCGCCAGAATGC-----TC-----

CTCCTGTTGC---- 224

| | | | | | | | | | | | | | | |

Db 2195

TTCATGCCTCCCTAATGCCTCAGTATCCAATATAAACTACAAAACTACTGTT-

CTTTT 2137

Qy 225 ----TGAGT-----ATCATCG--TC-----CTCCAC-

GTGCGGGTGCTG 256

| | | | | | | | | | | | | | |

|

Db 2136

CGTTTGAGTGGTATTTAATTAAACTTCAATTCTATGTTATTTCCACAGTC-

CAGTAATT 2078

Qy 257 GTGCTGCTGTTTCG-----TC----TCCACGATC-----

GTCAGCCAATGGATC 295

| | | | | | | | | | | | | | |

|

Db 2077

TATTTTAAATTTGAGTAATTTCAAATTCCACAAACAAAACACTGAAGAACAG-

CAATATTTT 2019

Qy 296

GTGGGCAATGGACACGCAACTGATCTCTGGCAGAACTGTAGCACCTC----- 342

| | | | | | | | | | | | | | |

Db 2018

GTTTGAATT--  
TCTCTCTTCTGTACACTCAGTGATCTAAAACACCACAATATCCAACATA 1961

```

Qy          343 ----TTCCTCAGGAAA-----TGTCCAC-CAC-
TGTTTCTCATCAT-----C 378
          ||||| ||      |   ||| |||  | ||   |||||
|
Db          1960
CACAAACCTCAGGGAAGGGTTAGTAAACACACACAAGATTGGAATCATGGTGCTCTTTGC 1901

Qy          379 ACC--AAACGAATGG--CTGCAG-----TCTG--TCCAGGCCACCAT----
GATCCTG 421
          ||  ||  |||||  |  |||      |  |  |||  || |||  |
||||
Db          1900
TCCTGAATGGAATGGTCCACAGAAAAAGCACAGGATACAGCACAAACATAAGGGGCACCTG 1841

Qy          422 TCGATCATCTTCAG-----CATTCTG-----TCTCTGTTCTGTT-----
CTTCT 461
          |   ||| |  ||      ||| ||      ||| |  |  |  |
||
Db          1840 T--
TACATATGAAGTGAGCAAAACATACTAGCATTTTCTATATGCATAATGGGGAAACCT 1783

Qy          462 GCCAA-----CTCTTCACCCTCA---
CCAAGGGGGGCAGGTTTACATCACTGGA 508
          ||  |      |  || || ||||  ||      |||| ||| |  | ||
|
Db          1782
GCATAGGTTAGAGGGCCTTTTACGCTCATTTAAAAATCAGGCAAGTTGTCTGTAAAC---A 1726

Qy          509 ATCTTCCAAATTCTTG-----CTG--GTC---TGTGCG-----
TGATGAGTGCTG--- 548
          | ||| |  ||| |      |||  ||  ||| ||      |||| |||| |
Db          1725
TTTTTCAATAATCTGGGAAGCACTGCAATCCAGTGTACGATGTGCTGATTAGTGTTGTCT 1666

Qy          549 -----CGGCCA-TC-TACACGGTGAGGCACCCGGAGTG-----GCAT---
CTCAAC 589
          |  ||| ||  || ||| |  ||  |||  |||  |||  ||  ||
|
Db          1665 TTGTTGGCACTGACAGTCTTGCAATGGTCATATGCC---
AGTGTTTTTGTCTTTAGCTTTTC 1609

Qy          590 TCGATTACTCCTACGGTTTCGCCTACATCCTGGC-----
CTGGGTGGCCTTCCCCCT 642
          |  || ||      || |||  | |||  |  |      |  ||  ||
|
Db          1608 TTTGAATA---
AAACAGATTTAAATGCATTTAGACAATACGTATTTGTAAGCTGTTTACA 1552

Qy          643 GGCCCT---TCTCAGCGGTGTCA-----
TCTATGTGATCTTGCGGAAACGCGAA 688
          |  ||  |  || ||  || |||  |  |      ||| |||  ||||  |||| |
|
Db          1551 TACACTAAATTTAAGAGAT-TCAATATTAGAGTTTCTTTGT-TTCTT---
TAAACACTAC 1497

Qy          689 TGAGGCGCCCAGACGGT-----CTGTCTGAGGCTCTGAGC-
GTACATAGGGAAGGG 738
          ||  | ||  |  |||  |  ||  |||  | |||| ||| |  |
|
Db          1496 AGA-GTGCAATCAGGTTCTTCACAACAGATTGAATAT-

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TGAGCAGTTCTTTAAAGAAAG 1439

Qy 739 AGGAAGGGAAAACAGAAAGCAGACAAAGAAAAAAGAGC-  
TAGCCCAAATCCCAAACCTCA 797

| | | | | | | | | | | | | | | | | | | | |

|  
Db 1438 AGG--GGGAAGAAAAAAGC---  
CCAAGTGAATAAAACATTGAAACTATTCCCCTTCGAA 1384

Qy 798 AACCAAACCAAACAGAAAGCAGTGGAG-GTGGGGGTTGCTGTTG--  
ATTGAAGAT----G 850

| | | | | | | | | | | | | | | | | | | | |

|  
Db 1383 AATAAATTCTAA---  
AATGATGTGGAATGTGAAATAAGGTTTTAACATAGGTGATCCAAG 1327

Qy 851 TATATAAT----ATC-----TCC-----GGTTTATAAAA-----  
CC 877

| | | | | | | | | | | | | | | | | | | | |

| |  
Db 1326  
TTTATAGTTAGAAACAAAAGAAGTCCTTCATGAAATAAAGGTTACAAGAACACGTTGCC 1267

Qy 878 TATTTATAACACTTTTTTACA-----TATATGTAC----  
ATAG 910

| | | | | | | | | | | | | | | | | | | | |

| | | |  
Db 1266 TGTTT-  
TCCCCCATTATAAACTGAGAAGTGGGTAAAGACGATGTTTCAGTACGAAAATAG 1208

Qy 911 -----TATTGTTT----GCTTTTT-----ATGTTG-ACCATCAGCC-----  
TC 943

| | | | | | | | | | | | | | | | | | | | |

| |  
Db 1207  
GTGACTACAGGATCAGCGCTTCATCTCACATGCTGTACCCAAAGCCAGGCTGTGGCTGTC 1148

Qy 944 -----GTGTTGAG-----CCTTA---AAGAAGTAGCTAAGG-----  
AACTTT-- 977

| | | | | | | | | | | | | | | | | | | | |

Db 1147  
CATACGGTGGTGCAGGTATAACCATAACCAAAGGTGCCTGGGGAGGGACGGCAACACTGG 1088

Qy 978 -ACATCCTAACAGTATAATC-----CAGCTCAGTATTTTTGTTTTGT-TTTTTGT---  
TT 1027

| | | | | | | | | | | | | | | | | | | | |

| |  
Db 1087  
GTCCTGCTGTCAGCATCAACTGGGGCTGACCATAAACAATGGGTTGTGTCTCTGTAGCTT 1028

Qy 1028 GTTTGTTTTGTTTTACCCAGAAATAAGATAACTCC--ATCTCGCC-  
CCTT-----C 1075

| | | | | | | | | | | | | | | | | | | | |

|  
Db 1027 GTTCTTCTTCTTTT-  
CTCAGTGATTCTGAAGCATCTAATTTATCCACCTTTGTCAAGTAC 969

Qy 1076 CCTTTTCAT---CTGAAAGAA-----GATA-----  
CCTCCC---- 1102

| | | | | | | | | | | | | | | | | | | | |

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Db          968
TCCTTCATGACCTGGATGAAATAGGGCATGGCAAAATCCATGATATTGTGCCTCCATGCA 909

Qy          1103 ---TCCCAGTCCACCTC-----ATTTAGAAAA---
CCAAAG 1132
      ||   | | | | |
|||||
Db          908
GTTTCTAGGACGACATCTGGCCTTAAAAGATCGTAACAGGTAAACAGACAAGCTCCAAAG 849

Qy          1133 -----TGTGGGTAGAAACCC---CAAATGTCCAAAAGCC-----
CT 1165
      |   | | | | |    ||   || |   |||
||
Db          848
CACTCTCTTTTTTCTTCTGCAAAAACCACTGCAGGAGTTCTTCAGCCAATTCAGTATCT 789

Qy          1166 T----TTCTGGTGGGTGACCCAGTGCATCCAACAGAAACAGC-----
CGCTGCC 1210
      |   ||| | | | |   || ||||| |   || |   | |
||
Db          788 TTAGATTTCAGAAGCATACTGCATTGCATCCT--
TGTAAGGCTGTCTTTCTTGACAGCT 731

Qy          1211 CGAACCTCTGTGTGAAGC-----
TTTACGCGCACACGGACAAAATGCCCAAAT 1259
      | |   ||||| | |   |||           || | | |   |   |||   ||
||||
Db          730
CTACACTCTGTTTCCAGCGATTGTTGCCTTTGAAGAGATAAGCAGCAATTCTCTGAACT 671

Qy          1260 ---GGAGCCCTTG-----CAAAAACACGGCTT--
GTGGCATTGGCATACTTGCCCT--- 1305
      ||| | ||       |||| |   ||   | |   |||| || | ||| | |
Db          670
CAATGAGTTCATGTTTTTCCAAACGCTGAGCAAGCGAGATATTGTCAAAGTTGTCATAAG 611

Qy          1306 ----TACAGGTG-----
GAGTATCTTTCGTCACACATCTAAATGAGAAATCAGT 1349
      || | ||         ||   ||||| ||   ||   ||| ||   |||
|
Db          610 CATCTATTGATGTTTCGCAGAGCCTGATAATCTTCTTCTGTAAT-
AAAAAGATTGTTCAAT 552

Qy          1350 GA--CA---ACAAGTCT-TTGAAATGGTGC-----
TATGGATTACCA-- 1386
      ||   ||   ||| | | |||   |||| |           || || | | |||
Db          551
GATTCATTCACAGATTGTTGTTATGGTTCTGAACTGAACGCAAATACGGTTTCACCAGT 492

Qy          1387 --TTCCTTATTATC-----ACTAATCATCTAAAC-----AACTCACTG----
GAA 1425
      |   ||   ||| |   |   ||||   ||   ||   |   || | |
||
Db          491
GGTAGCTGTTTAACCTTGCTGAAATAATTGACTGCACGAGTGTGATCCAACCGTGGAGAC 432

Qy          1426 ATC-CAATTAACA----ATTTTACAACATAAGATAGAAT-----
GGAGACCTGAATAATT 1475
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|  
Db 431 AGCACCATCAGCAAATCATTTAACAACAGAGGCTTGAATTCTAAGTAGAACTG--  
TATTG 374

Qy 1476 CTGTGTAATATAAATGGTTTATAACTGCTTTTGTAC--CTAGCTAGGC--  
TGCTATTATT 1531  
|| |||| |||| | | | || || || || || ||  
||  
Db 373  
CTCTGTAGTATAGTTCCACATTGGCAACCTTGGTAATGATATCTTTGAATTGCCCTTCTT 314

Qy 1532 AC-----TATAATGAGTAAATCAT-AAAGCCTTCAT--  
CACTCCCACATTTTTCTTAC- 1581  
| | || | | |||| | | | || | || || || ||  
|||  
Db 313  
TCCAGGCATCAGTTGGATGATTCATCATGGTAATTATGGCATTATCATATTCTTCATACT 254

Qy 1582 GGTCGGAGCATCAGAACAAGCGTCTAGACTCCTTGGGACCGTGAGTTCC--  
TAGAGCTTGG 1640  
||| | || | || || || | | | |||| || |||  
|  
Db 253 TGTCATA-CAAAAACACCAGT-TCTG---  
CCCAAAGATGAGCTTGTTCTGCAGCTCTTAG 199

Qy 1641 C----TGGG-----TCTAGGCTGTTCTGTGC--  
CTCCAAGGACTGTCT----- 1677  
| |||| |||| | | | |||| | || ||  
Db 198 CACCTTGGGAATATTCACCTCTAGAC----  
CAGAACAGCTCCAGGTGCTCCCTCATTTTCT 143

Qy 1678 --GGCAATGACTT---  
GTATTGGCCACCAACTGTAGATGTATATATGGTGCCCTTCTGAT 1732  
||| | || |||| | | || || || || | || || |  
|||  
Db 142 GAGGCTTAAATTTAGAGTATAG---AATAGCTAATTCAGTAAACA---  
TTCCCATGTGA- 90

Qy 1733  
GCTAAGACTCCAGACCTTTTGTGTTTTGCTTTGCATTTTCTGATTTTATACCAACTGTGTG 1792  
||| ||| || || || |||| | | |||| | | |  
|  
Db 89 GCTC--GCTCAAGTCCCAGTG--CTGCTTCCAACATGGTGATCAGCT--  
CTTCAAAATA 37

Qy 1793 GACTAAGATGCATTAATAAATCAGAGTAAC 1826  
| | | ||| | | | || || || ||  
Db 36 GCC-ACGAT-CCTGATAGTAGCCAGTAGGCCAAC 5

# RESULT 12

US-10-478-914-17

; Sequence 17, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 17  
; LENGTH: 2198  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-17

Query Match 37.7%; Score 4097; DB 1; Length 2198;  
Best Local Similarity 45.1%; Pred. No. 5.9e-268;  
Matches 1026; Conservative 0; Mismatches 664; Indels 586;  
Gaps 150;

Qy 1 CAGTTACAGGGAG-----CACCACCAGGGAACATCTCGGGG----AGCC--  
TGGTT--G 46

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|

Db 5 CTGGTCTTGTGTGGGTGTTTTCCAGCACGGAAG--  
TCGAGATAATTGCCAATGATCAGG 63

Qy 47 GAAGCTG---CAGGCTTAG-TCTGTCGGC--TGCGGGTCTCTGAC----  
TGCCCTGTGGG 96

| | | | | | | | | | | | | | | | | | | | | |

Db 64 GAAACCGAACCCTCCAAGCTATGTCGCCTTTAC--  
GGACACTGAACGGTTGATCGGTGAT 122

Qy 97 G-----AGGGTC---TTGCCTT-AACATCCCTTGCA----  
TTTGGCTGCAAAGAAATCT 142

| | | | | | | | | | | | | | | | | | | | | |

Db 123 GCCGCAAAGAATCAAGTTGCAATGAACCCACCAACACAGTTTTTGTATGCCAA--  
ACGTCT 181

Qy 143 GCTTGAAGAAGG---GGTTACGCTGTTTGGCCGGGC-----AGAACT-----  
CC----- 185

| | | | | | | | | | | | | | | | | | | | | |

Db 182 GATTGGACGCAGATTTGATGATGCTG--  
TTGTCCAGTCTGATATGAAACATTGGCCCTTTA 240

Qy 186 -----GCTGAGCAGAACTTG---CC-----  
GCCAGAA 209

| | | | | | | | | | | | | | | | | | | | | |

Db 241 TGGTGGTGAATGATGCTG--  
GCAGGCCCAAGGTCCAAGTAGAATACAAGGGAGAGACCAA 299

Qy 210 TGCTCC--TCCTGTTGCTGAGTATCATC----GTCCT--  
CCACGTCGCGGTGCTGGTGCT 261

| | | | | | | | | | | | | | | | | | | | | |

Db 300 AGCTTCTATCCAGAGG--AGGTGTCTTCTATGGTTCTGACAAAGATGAAG--  
GAAATTGCA 356

Qy 262 GCTGTTTCGTCTCCACGATCGTCAG---

CCAATGGATCGTGGGCAATGGACACGC----- 312  
 | | | | | | | | | | | | | | | | | | | |  
 Db 357 GAAG--CCTACCTTGGGAAGACTGTTACCAATG--  
 CTGTGGTCACAGTGCCAGCTTACTT 412

Qy 313 AACTGA-TCTCTG-----GC-AGAACTGTAGCACCTCT-----  
 TCCT 347  
 | | | | | | | | | | | | | | | | | | | |  
 | |  
 Db 413  
 TAATGACTCTCAGCGTCAGGCTACCAAAGATGCTGGAACATTGCTGGTCTCAATGTACT 472

Qy 348 CAGGA-----AATGT-CCACC-----ACTGTTTCT--  
 CATCATCACCAAACGAATGGC 392  
 | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 473  
 TAGAATTATTAATGAGCCAACTGCTGCTGCTATTGCTTACGGCTTAGACAAAAAGGTTGG 532

Qy 393 TGCAGTCTG-TCCAGGC-CACCATGATCCT-----GTCGATCATCTTCAG---  
 CATTCTG 442  
 | | | | | | | | | | | | | | | | | | | |  
 Db 533  
 AGCAGAAAGAAACGTGCTCATCTTTGACCTGGGAGGTGGCACTTTTGATGTGTCAATCC- 591

Qy 443 TCCTCTGTTCTGTT--CTTCT-----GCCAACTCTTC-----  
 ACCCTCACCAAGG-G 486  
 | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 592  
 TCACTATTGAGGATGGAATCTTTGAGGTCAAGTCTACAGCTGGAGACACCCACTTGGGTG 651

Qy 487 GGGCAGGTTTT-ACATC--ACTGGAATCTTCCAAATTCTTGCTG-  
 GTCTGTGCGTGATGA 542  
 | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 652 GAGAAGATTTTGACAACCGAATGG--TCAACCATTTTATTGCTGAGTTTAAGCGC-  
 AAGC 708

Qy 543 GTGCTGCGGCCATCTACACGGTGAGGCACCCGGAGTG--  
 GCATCTCAACTCGGATTACTC 600  
 | | | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 709 ATAAGAAGGACAT-----CAGTGAG--AACAAGAGAGCTGTAAGACGCCTCCG--  
 TACTG 759

Qy 601 CT-----ACG-  
 GTTTCGCCTACATCCTGGCCTGGGTGGCCTTCCCCCTGGCCCTTCTC-- 652  
 | | | | | | | | | | | | | | | | | | | |  
 Db 760 CTTGTGAACGTGCTAAGCGTAC--CCTCTCTT-----  
 CCAGCACCCAGGCCAGTATTGA 811

Qy 653 -AGCGGTGTCATCTATGTGATCTTGCAGAAACG-CGAATGAGGCGCCAGAC----  
 GGTC 706  
 | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 812 GATCGAT-TC-TCTCTATGA-----  
 AGGAATCGACTTCTATACCTCCATTACCCGTGCC 864

Qy 707 TGTCTGAGGCTCTGA--

GCGTACATAGGGAAGGGAGGAAGGGAAAACAGAAAGCAGACAA 764  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 865 GATTGAAGAACTGAATGCTGACCT-----GTTCCGTGGCACCTG-----  
 GACCC 910

Qy 765 AGAAAAAGAGCTAGCC--  
 CAAAATCCCAAACCTCAAACCAAACCAAACAGAAAGCAGTGG 822  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 911 AGTAGAGAAAGC---CCTTCGAGATGCCAACT-AGACAAGTC---ACAGATT-  
 CA---- 958

Qy 823 AGGTGGGGGTTGCTGT--TGATTGAAGATGTATATAATATCTCC-  
 GGTTTATAAAACCTA 879  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 959 -----  
 TGATATTGTCCTGGTTGGTGGTTCTACTCGTATCCCCAAGATTTCAGAAGCTTC 1011

Qy 880  
 TTTATAACACTTTTTACATATATGTACATAGTATTGTTTGTCTTTTTATGTTGACCATCAG 939  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | | | |  
 Db 1012 TCCAAGAC-----TTCTTCAATGGA-AAAGAACTGAAT-----  
 AAGAGCATCAA 1054

Qy 940 CCTCGTGTGAGCCT-----TAAAGAAGTAGCT----  
 AAGGAACCTTTACATCCTAACAGT 990  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1055 CC-C-TGATGAAGCTGTTGCTTATGGTGCAGCTGTCCAGGCAGC----  
 CATCTTGTCTGG 1108

Qy 991 ATAATCCAG-CTCAGTATTTT--TGTTTTGTT--  
 TTTTGTTTGTGTTTGTGTTTGTGTTTACCC 1045  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | |  
 Db 1109 AGA--CAAGTCTGAGAATGTTCAAGATTTGCTGCTCTTGGATGTCACTCCTCTTT--  
 CCC 1164

Qy 1046 AGAAATAAGATAACTCCATCTCGCCCCTTCCCTTTTCATCTGAAAG-  
 AAGATACCTCCCT- 1103  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1165 TTGGTATTGA-  
 AACTGCTGGTGGAGTCATGACTGTCCTCATCAAGCGTAATACCACCATT 1223

Qy 1104 -----CCAGTCCACCTC-----  
 ATTTAGAAAACCAAAGTGTGGGTAGAAAC 1145  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1224 CCTACCAAGCAGACACAGACCTTCACTACCTATTCTGACAACC--  
 AGCCTGGTGTGCTTA 1281

Qy 1146 CCCAAATGTCCAAAAGC-----CCTTTTCTGGTGGGTGAC--CCAGT---  
 GC----- 1187  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1282 TTCAGGTTTATGAAGGCGAGCGTGCCATGAC-  
 AAAGGATAACAACCTGCTTGGCAAGTTT 1340

Qy 1188 -ATCCAACAG--AAACAGCC-GCTGCCCCGA-----ACCTCTGTGTGAAG---  
 CTTTACGC 1235

| | | | | | | | | | | | | | | | | |  
 |  
 Db 1341  
 GAACTCACAGGCATACCTCCTGCACCCCGAGGTGTTCTCAGATTGAAGTCACTTTTGAC 1400  
  
 Qy 1236 -----GCACACGG---  
 ACAAATGCCCAAACCTGGAGCCCTTGCAAAAACACGGCTTGTG 1286  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 1401 ATTGATGCCAATGGTATACTCAATGTCTCTGCTGTGG-----  
 ACAAGAGTACGGGAAAAG 1455  
  
 Qy 1287 -GCATTGGCATACTTGCCCTTA-----CAGGTGGAGTATCTTCGTCA---  
 CACATC 1333  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 1456  
 AGAACAAGATTACTATCACTAATGACAAGGGCCGTTTGAGCAAGGAAGACATTGAACGTA 1515  
  
 Qy 1334 TAAATGAGAAATCAGTGAC-AACAAGTCT-TTGAAATGGTGCTATGG----  
 ATTTACCAT 1387  
 | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1516  
 TGGTCCAGGAAGCTGAGAAGTACAAAGCTGAAGATGAGAAGCAGAGGGACAAGGTGTCA- 1574  
  
 Qy 1388 TCCTTATTATCACTAATCATCTAAACAACCTCACTGGAAATC--  
 CAATTAACAAT-----T 1440  
 | | | | | | | | | | | | | | | | | |  
 Db 1575  
 TCCAAGAATTCACCTTGAGTCCTATGCCTTCAACATGAAAGCAACTGTTGAAGATGAGAAA 1634  
  
 Qy 1441 TTACAACATAAGATAGA--ATGGAGAC---CTGAATAATTCT-----  
 GTGTAATATAAA 1489  
 | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1635 CTTCAAGGCAAGATTAACGATGAGGACAAACAGAA-  
 GATTCTGGACAAGTGTAATGAAA- 1692  
  
 Qy 1490 TGGTTTATAACTGCTTTTGTACCTAGCTAGGCTGCT-----  
 ATTATTACTATAA 1538  
 | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1693 ---TTATCAACTGGCTTGATAAGAATC-  
 AGACTGCTGAGAAGGAAGAATTTGAACATCAA 1748  
  
 Qy 1539 TGAGTAAATC---  
 ATAAAGCCTTCATCACTCCACATTTTTCTTACGGTCGGAGCATCAG 1595  
 | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1749 CAGAAAGAGCTGGAGAAAGTTTGCAAC---CCCATCATCACCAAGCTGT----  
 ACCAGAG 1801  
  
 Qy 1596 AACAAGCGTCTAGACT-----  
 CCTTGGGACCGTGAGTTCCTAGAGCTTGGCTGGGT 1646  
 | | | | | | | | | | | | | | | | | |  
 Db 1802 TGCAGGAGGCATGCCAGGAGGAATGCCTGGGG-----GATTTCTG-----TGG-  
 TGGAG 1851  
  
 Qy 1647 CTAGGCTGTTCT----GTGCCTCC-AAGGACTGTCTGGCAATGAC----

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TTGTATTGGCC 1697
      || | ||| |||| ||| | | || ||| ||| |
|||
Db      1852 CTCCTCC-CTCTGGTGGTGCTTCCTCAGGGC---
CCACCATTGAAGAGGTTGATTAAGCC 1907

Qy      1698 -ACCAACTGTAGATGTATATATGGTGCC-----CTTCTGATG---
CTAA---- 1737
      ||||| ||||| ||| || | | ||| | |||
Db      1908 AACCAAGTGTAGATGTA-
GCATTGTTCCACACATTTAAACATTTGAAGGACCTAAATTC 1966

Qy      1738 GACTCCAGACCTTT---TGTTTT-----TGCTTT-----
GCATTT 1769
      | | | || | |||| | ||| |
|||||
Db      1967
GTAGCAAATTCTGTGGCAGTTTTTAAAAAGTTAAGCTGCTATAGTAAGTTACTGGGCATTC 2026

Qy      1770 TC-----TGAT-----
TTTATACCA 1784
      || ||| |||||
Db      2027
TCAATACTTGAATATGGAACATATGCACAGGGGAAGGAAATAACATTGCACTTTATAAAC 2086

Qy      1785 ACTGT-----GTGGACTAAG--ATGCATTAAATAAAC---ATCAGAGTAACTC
1828
      ||||| ||||| | | ||| |||| |||| | | | | |
Db      2087 ACTGTATTGTAAGTGGAAAATGCAATGTCTTAAATAAACTATTTAAATTGGCAC
2142

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# RESULT 13

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US-10-478-914-57
; Sequence 57, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 57
; LENGTH: 2336
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-57

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Query Match          37.7%; Score 4092; DB 1; Length 2336;
Best Local Similarity 43.0%; Pred. No. 1.9e-267;
Matches 1042; Conservative 0; Mismatches 682; Indels 698;
Gaps 138;

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Qy          3  GTTACAGGGAGCACACCAG----GGAACATCTCGGGGA-----
GCCTGGTTGGAAGCT 52
|          |||||      || | | ||      ||||      |||| | |      ||||      |||||
|
Db          11  GTTACT-TCTGCTCTAAAAGCTGCGGAATTCCTCGAGCACTGTTGGCCT-
ACTGGAA--T 66
|
Qy          53  GCAGGCTTAGTCTGTC--GGCTGC--GGGTCTCTGACTGC-----
CCTGTGGGGAG 99
|          ||      ||| || | | | | |||||      ||      |||| | ||      |||
Db          67  GCGAGCTGAG-CAGACAGGGCTGCAAGGAAATCTGGC-
GCGGTTCAATACCT----- 116
|
Qy          100 GGTCTTGCCT-----TAACATCCCTTGCAATTTG----GCTG-
CAAAGAAA----T 140
|          |||| ||||      || |      ||      ||||      ||| ||||      |
|
Db          117
CGTCTAGCCTGGGTTCCAGTATCTAATTTTTTTTTTTGTTTTAACTGACAAACTCATTTCT 176
|
Qy          141 CTGCTTGGAAGAAGGGGTTACGCTGTTTGG-----CCG-----GGC-
AGAAACTCCGC 187
|          || || ||| | | | | ||||      |||      ||      || |||| |
|
Db          177 CTACTGGGAC-
AGGATGCTGTGCTGGCTGGAAGTTCCATTTCTACAGCAAGAATCCTATC 235
|
Qy          188 TG----AGCAGAACTTG-CC----GCCAGA-ATGCTCCTCCT-----
GTTGCT 225
|          ||      ||||| ||| ||      |||| |      ||||      ||
||||||
Db          236
TGAAACACAGAAGTTGTCTCTAGCCACAGCAGCTCGAACTTTTTTGGATTGTCGTTGCT 295
|
Qy          226 GAGT-----ATCATCGTCTCTCC-----
ACGT 246
|          | |      |||| | | |||
||||
Db          296
GCTTTCTCCCATACCCCCATCCCCTTTTGACAAAGATCCAAGTGTAAAAAGTCTTACGT 355
|
Qy          247 CGCGGTGCTGG--TGCTGCTGTTC-----
GTCTCCACGATC----- 280
|          | || | || | | || | ||||      ||      ||| ||
Db          356
AACAGTTCAGGACTACTTCGGTTCTTTTACTGGGTAAGCACTTTCAATTTTTTTTTTTTAA 415
|
Qy          281 ---GTCAGCC-----AATGGATC-GT----
GGGCAATGGACACGCAACT----- 316
|          ||||      | || ||| ||      |||| | |||      | ||
Db          416 ACTAAAAGCCATTTTAAAATTGAATCTGTTGAGGGGC--
TTGACTAAAATCTTTTAAAGTA 473
|
Qy          317 -----GATCTCTGGCAG-----AACTGTA---
GCACCTCT 343
|          ||      ||| |||      ||| |      || |||
|
Db          474
ATTTGTGTAATGGAATACTGTCACTGGATTTTTTTCGTCTCATTTCTGCACGTGCTCCTTT 533

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GCCAGCCATTTTCCCAGCTCCGCTTTGTGCAATCTAAAGGAATGCATCCCCTCTGAAGCA 1061

Qy 744 GGGAAAACAGAAAGCAGACAAAGAAAAAG-----  
AGCTAGCCCAAATCCCAAACCTCA 797

| | | | | | | | | | | | | | | | | | | | | |  
| | |

Db 1062 GTCTTGCCAGAGCCTAGTGAGGGAGAGAAGTATGGTAAATACCACAACATATGGAA-  
TCA 1120

Qy 798 AACCAAACC--AAAC-----  
AGAAAGCAGTGGAGGTGG----- 828

| | | | | | | | | | | | | | | | | | | | | |

Db 1121  
GAAAATACCGGGAACCTGGAGTGGGCAAGGGGGAATGCAGAGGGTGTGGAAATTTTTTAGT 1180

Qy 829 -----GGGTTGCTGTTGATTGA----  
AGATGTATATAATATCTCCGGTTTATAAACCTA 879

| | | | | | | | | | | | | | | | | | | | | |  
|

Db 1181 GATCTGGAATG-TGTTGAGTGACAGGAAGTGCCCCAAGCTTCTCC-----  
CCCACCA 1232

Qy 880 TTTATAACA-----CTTTTTACATA-----  
TATGTACATAGTATTGTTT---- 918

| | | | | | | | | | | | | | | | | | | | | |

Db 1233  
CTCTTCTCAGTCGCGCCTGCTTTTGTCTAACTCTTGTAATCTACACACTACTGCTTACAA 1292

Qy 919 -GCTTTTTATGTT---GACCATCAG---CCTCGTGTTGAGCCTTA--  
AAGAAGTAGCT-- 967

| | | | | | | | | | | | | | | | | | | | | |

Db 1293 AGCTGTCTGAGTTTAAGACAAAAGAAACCTAAAAGT-  
CTCCTTACTTCATAGTACCTGT 1351

Qy 968 -----  
AAGGAACTTTACATCCTAACAGTATAATCCAGCTCAGTATTTTTGTTTTGTTT 1020

| | | | | | | | | | | | | | | | | | | | | |

|  
Db 1352 GATATGGAAGGAATGTAAAAGCATGACCCTTTAAGC---  
CTATGGACATTTTTTCAGGTA 1408

Qy 1021 TT----TGTTTGTTTGTTTGTTTACCCAGAAATAAGATAACTC-----  
CATCTCGCCC 1071

| | | | | | | | | | | | | | | | | | | | | |

|  
Db 1409  
TACAGGAGAAAGATAAAATAATTTTCCACAGAAAAATGAGAATTATGAATTATATAGTTC 1468

Qy 1072 C--TTCCCTTTC-  
ATCTGAAAGAAGATACCTCCCTCCCAGTCCACCTCATTTAGAAAACC 1128

| | | | | | | | | | | | | | | | | | | | | |

| |  
Db 1469 AGGTTCCAAATCTAATTTTTTAAAGAATTCTGATTG----TGCTACACTTT-----  
ACA 1518

Qy 1129  
AAAGTGTGGGTAGAAACCCCAAATGTCCAAAAGCCCTTTTCTGGTGGGTGACCCAGTGCA 1188

| | | | | | | | | | | | | | | | | | | | | |

| | | |  
Db 1519 AATGCTTAGGTTGGTTCCTAATTTG--AAGGAGACTTGTTTTATTGGT----

```

Qy          1189 TC-CAACAGAAACAG---
CCGCTGCCCGAACCTCTGTGTGAAGCTTTACGC GCACACGGA 1244
      |   ||   |||   |   |   |   |   |   |   ||   |||   ||||   |   |   |   |
|
Db          1573 TTGCATTTGAACCTTGTTTCTATTTTCTTTGCATAAATTTGGA-
CTTTGGGAGAAAAATGC 1631

Qy          1245 CAA-----AATGCCC-----AAACTGGAG-----
CCCTT----- 1268
      ||           |||| |           |||   |||           |||||
Db          1632
AAAGTAATAAGTAGAATGCACTTGGGGGAAAAAAGGAGGATTTTTCCCTTCATGGGTTGG 1691

Qy          1269 ---GCAAAAACACGGCTTGTTGGCATTG-----
GCATACTTGCCCTTACAGGTGGAGTATC 1320
      |   |       |   ||   ||||   |||           ||   ||   |   |||||
||
Db          1692 AAAGTATTTTAAAGGGTTGTTTTCTTGAAAAACAAGCTCTCTCTTAC-----
TTTC 1743

Qy          1321 TTCGTC-----ACACATC-----TAAATG-----AGAAATC-----
AGT 1349
      |   ||           ||   |           |||||           ||||| |
||
Db          1744
TGCATCTATGCTATAAAGATAACTATGCTATAATAAATGTAAGGTAGAAAACTTTAAAGA 1803

Qy          1350 GACAACA--AGTCTT-----
TGAAATGGTGCTATGGATTTACCATTCCCTTATTATCACTA 1402
      || || |   ||| ||   |||| |   || |   |||| ||   |           ||||
Db          1804 GAAAATAACAGTGTCTAAGTGAAAAGCTACTTAGCATTTTCCCAAAC-----
TCACAC 1857

Qy          1403 ATCATCTAAACA-ACTCACTGGAAAT-----
CCAATTAACAATTTTACAA- 1446
      || |||   |||| |   ||||   ||||           |||| |||   |   |   |
|
Db          1858 ATTATC--
AACAGAAACACTAAAAATTAAGAGAAAAGCGGCCAACTAATTAAATAGCTAG 1915

Qy          1447 -CATAAGATAGAATGGAGACCTGAATAATTCTGTGTAATATAAATGGT--
TTATAACTGC 1503
      |   ||   |   |   |   |   ||||   |||| |   ||||| |   ||   |
||
Db          1916
CCTTATTTTGGGGGTATGGGATAGAAAATTAAGTGTGAATAAAATGATACTTGGGAATGT 1975

Qy          1504 TT-----
TTGTACCTAGCTAGGCTGCTATTATTACTATAATGAGTAAATCAT----- 1550
      ||   |   |||| |   ||| || || |   |   |   |||| |||| |
Db          1976 TTCTCCCTCGTACC-
ACAAAGGATGTTAGTGGTCAGCCTACGAGTTAATCCTTCCTAGCA 2034

Qy          1551 -----AAAGCCTTCAT--CACTCCCACATTTTTTC---TTACGG-
TCGGAGCATCAGAAC 1598
      |||||||||   |   |   || || |||   |   |||   ||| |   ||
|
Db          2035

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TGGCTCTGAGCCTTCATGCCGAGCAGACGTTATTACATGACGATTGAAAAGTCCATTC 2094

Qy 1599 AAGCGTCTAGACTCCTTGGGACCGTGAGTTCCTAGAGCTTGGCTGGGTCTAGGCT---  
GT 1655

| | | | | | | | | | | | | | | | | | | |  
| |

Db 2095 ATATATCTCG-CTACCTGGATT--TGAAT---AGAAACCAGACAG---  
CAATTCTTTAGT 2145

Qy 1656 TCTGTGCCTCCAAG-GACTGTCTGG-CAATGAC-TTGTATTGGC-----  
CACCAACTG 1705

| | | | | | | | | | | | | | | | | | | |  
| | |

Db 2146 TCC-  
AGCCACCATTGCCCCACTGGACAATAGCGATTTGTTAGCACAGAGTCACAGGCTG 2204

Qy 1706 TAGATGTATATATGGTGCCCTTCTGATGCTAAGA-  
CTCCAGACCTTTTGTGTTTGTCT--- 1761

| | | | | | | | | | | | | | | | | | | |  
Db 2205 -----TGGGACAC-----  
AAAGCTTGGAGCTGCAGAAAGATGGGGGATTCAGAG 2248

Qy 1762 ---TTGCATTTTCTGATTTTATAC-CAACTGTGTGGACTAAG-  
ATGCATTAATAAATAACA 1816

| | | | | | | | | | | | | | | | | | | |  
|

Db 2249  
AACAGGAAATTACAGGCTCGATGCACTCCTGGCAGCTCTGAGAATACAAAAAAAAAAAAA 2308

Qy 1817 TCAGAGTA-----ACTC 1828  
| | | | |

Db 2309 AAAAAAAGGCCACATGTGCTC 2330

#### RESULT 14

US-10-478-914-57/c

; Sequence 57, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-255226

; PRIOR FILING DATE: 2001-08-24

; NUMBER OF SEQ ID NOS: 417

; SOFTWARE: PatentIn version 3.2

; SEQ ID NO 57

; LENGTH: 2336

; TYPE: DNA

; ORGANISM: Homo sapiens

US-10-478-914-57

Query Match 37.4%; Score 4064.5; DB 1; Length 2336;  
Best Local Similarity 42.4%; Pred. No. 1.6e-265;

Matches 1021; Conservative 0; Mismatches 680; Indels 707;  
Gaps 136;

Qy 12 AGCAC---CACCAGGGAAC-----ATCTCGGGG-  
AGCCTGG 43 ||| | ||| | | | |||| | | |||

Db 2335  
AGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTTTGTATTCTCAGAGCTGCCAG- 2277

Qy 44 TTGGAAGCTGCAGGCTTAGTCTGTCGGCTGCGGGTCTCTGACTGCC----  
CTGTGGGGAG 99 | || | || |||| | | | ||||| | || || | |

Db 2276 --GAGTGCATCGAGC-----  
CTGTAATTTCTGTTCTCTGAATCCCCATCTTTCTGCAG 2224

Qy 100 GGTCTTGCCTTAACATCCCTTGCATTTGGC----TGCAAAGAAATCTGC--  
TTGGAAGAA 153 | ||| || || || || | ||||| || |||

Db 2223 CTCCAAGCTTTGTGTCCACAGCCTGTGACTCTGTGCTAACAAATC-  
GCTATTGTCCAGT 2165

Qy 154  
GGGGTTACGCTGTTTGGCCGGGCAGAACTCCGCTGAGCAGAACTTGCCGCCAGAATGCT 213  
|||| | ||| ||| | |||| | | |||| | | | |

Db 2164 GGGG-----CGAATGGT--GGCTGGAAC-----  
AAAGAATTGCTGTCTGGTTTCT 2121

Qy 214 -----CCTCCTGTTGCTGAG---  
TATCATCGTCCTCCACGTCGCGGTGCTGGTG-----C 260  
||| | | ||| ||| | | || || || | |||

Db 2120 ATTCAAATCCAGGTAGCGAGATATATGAATGGACTTTTCGAATCG--  
TCATGTGAATAAC 2063

Qy 261 TGCTGTTTCGTC-TCCACGATCGTCAGCCA-----ATGGA-----  
TCGTGGGCAATGGA 307 ||| ||| | | | ||| |||| | ||| |||| ||| ||

Db 2062 GTCTGCTCGGCATGAAGGCTCAG-AGCCATGCTAGGAAGGATTAACTCGTAGGC--  
TGAC 2006

Qy 308 CACGCAACTGATCTCTGGCAGAAC--TGTAGCACCTCTTCC-----  
TCAGGAAATGTCCA 360 ||| ||| ||| | | | || | || | | ||| ||

Db 2005 CAC-TAAC--  
ATCCTTTGTGGTACGAGGGAGAAACATTCCCAAGTATCATTTTATTCACA 1949

Qy 361 CCACTGTTTC--TCATCATCACCAAACGAATGGCT-GCAGTCTGTCCA---  
GGCCACCAT 414 | |||| || | || || | |||| || | | |||| |

Db 1948  
CTTAATTTTCTATCCCATACCCCCAAAATAAGGCTAGCTATTTAATTAGTTGGCCGCTTT 1889

Qy 415 GATC-----CTGTGCATCATCT-TCAG-----CATTCT--  
GTCTCT 447 || |||| ||| || | || || || || ||

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Db          1888
TCTCTTAATTTTTAGTGTTTCTGTTGATAATGTGTGAGTTTGGGAAAAATGCTAAGTAGCT 1829

Qy          448 GTTC-----CTGTTCT----
TCTGCCAACTCTTCACCCCTACCAAGGGGGGCAGG 493
      |||          ||||| | |||  || | |||  ||| |
Db          1828 TTTCACCTAGAACACTGTTATTTTCTCTTTAAAGTTTCTACCTTA-----
CATT 1779

Qy          494 TTTTACATCACTGGAATCTTCCAA--ATTCTTGCTG---
GTCTGTGCGTGATGAGTGCTG 548
      | ||| | || | ||||| | || | ||| | | | | | |
|
Db          1778
TATTATAGCATAGTTATCTTTATAGCATAGATGCAGAAAGTAAGAGAGAGCTTGTTTTTT 1719

Qy          549 C-GGCCATCTACACGGTGAGGCACCCGGAGTGGCATCTCAACTC-----
GGATTACTCC 601
      | | | | || | | | | | | | |||| | ||| |
|||
Db          1718 CAAGAAAACAACCCTTTAAAATA-----
CTTTCCAACCCATGAAGGGAAAAATCC 1669

Qy          602 TACGGTTTCGCCTACATCCTGGCCTGGGTGGCCTTCCCCCTGGCCC-----
TTCTC 652
      | | ||| ||| || | | ||| | | | |
|||||
Db          1668 TCCTTTTT-----TCC---CCCAAGT-
GCATTCTACTTATTACTTTGCATTTTTTCTC 1621

Qy          653 AGCGGTGTC---ATCTATG---TGATCTTGCGGAAACG----
CGAATGAGGCGC-----C 697
      | ||| || |||| || | |||| | |||| ||
|
Db          1620 C-CAAAGTCCAAATTTATGCAAAGAAAAAT--
AGAAACAAGTTCAAATGCAATGCATTAAC 1564

Qy          698 CAGA-----CGGTCTGTCTGAGGCTCTGAGCGTACATAGG-----
GAAGGGAGGAAG 744
      || | |||| | | | | | ||| | ||| |
||
Db          1563
CAAATAAAACAAGTCTCCTTCAAATTAGGAACCAACCTAAGCATTTGTAAAGTGTAGCAG 1504

Qy          745 GGAAAAACAGAAAGCAGACAAA-----GAAAAAAGAGCTAGC-----
CCAAAAATCC 789
      || ||||| | ||| | || | ||| | | ||
||
Db          1503 ---
AATCAGAATTCTTTTAAAAAATTAGATTTGGAACCTGAACTATATAATTCATAATTCT 1447

Qy          790 CA-----AACTCAAACC---AAACCAAACAGAAAG--
CAGTGG 822
      || | || | || | ||| | | || | ||
||
Db          1446
CATTTTTCTGTGAAAAATTATTTTATCTTTCTCCTGTATACCTGAAAAAATGTCCATAGG 1387

Qy          823 AGGTGGGGGT--TGCTGTTGATTGAAGATGTATATAATATCTCCGGTT-----

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TATA 872

|||| | ||| || | || | |||| | || ||  
Db 1386 CTTAAAGGGTCATGCTTTT-----  
ACATTCCTTCCATATCACAGGTACTATGAAGTAAG 1333

Qy 873 AAACCTATTTATAACACTTTTT-----  
ACATATATGTACATAGTATTGTTTG 919

| || |||| ||||| ||| | |||| |||| |||  
|  
Db 1332 GAGACT-  
TTTAGGTTTTCTTTTTGTCTTAAACTCAGACAGCTTTGTAAGCAGTAGTGTGTA 1274

Qy 920 CTTTTTATG---TTGACCAT--CAGCCTCG--TGTTGAGCCT---  
TAAAGAAGTAGCTAA 969

|| | | ||| | ||| | || | | ||| ||||  
Db 1273  
GATTACAAGAGTTAGACAAAAGCAGGCGCGACTGAGAAGAGTTGGTGGGGGAGAAGCTTG 1214

Qy 970 GGAACCTTTACATCCTAACAGTATAATCCAGCTCAGT----ATTTT-----  
TGTTT 1015

|| || | | || | |||| ||| | ||| ||  
|  
Db 1213  
GGGCACTTCCTGTCACTCAACACATTCCAGATCACTAAAAAATTTCCACACCCTCTGCAT 1154

Qy 1016 TGTTTTTTG-----TTTGTT-----TGTTTTGTTTTACCCAGAAATAAGATAACT-  
CCA 1063

| ||| ||| | |||| | || | ||| |  
|||  
Db 1153  
TCCCCCTTGCCCACTCCAGTTCCCGGTATTTTCTGATTCCATATGTTGTGGTATTTACCA 1094

Qy 1064 TC--TCGCCCCCTTCCCTTTTCATCTGAAAGAAGATACCTCCCTCCCAG----  
TCCACCTCA 1117

| || | || || || |||| |||| || | || | ||  
||  
Db 1093 TACTTCTCTCCCTCACTAGGCTCTGGC--AAGA---CTGCTTCAGAGGGGATGCA-  
TTCC 1040

Qy 1118 TTTAGAAAAC-CAAAGTG----TGGGTAGAAACC-----CCAAAT---  
GTC----- 1155

||||| | |||| | |||| | | | ||| |||  
Db 1039  
TTTAGATTGCACAAAGCGGAGCTGGGAAAATGGCTGGCAGTTTCAGAATCTAGTCACGAT 980

Qy 1156 -----  
CAAAGCCCTTTTCTGGTGGGTGACCCAGTGCATCCAACAGAAACAGCCGCTGC 1209

|| ||| | | | |||| | | || | ||||  
|  
Db 979 CGCACGCATGAGCACCTCACACATCCATGTCCC--TAC--CCGCC-----  
CCCCCGCT-C 930

Qy 1210 CCGAACCT---CTGTGTGAAGCTTTACGCGCACACGG-----  
ACAAAATGCCCAA 1257

||| ||| ||| ||| | | | ||| | ||| |||  
|  
Db 929 CCGCCCCTGCAGCTGGCTGA--  
CCTGTCTCACCCACTGCTGGCCTATCGAACGCCAGGA 872

Qy 1258 CTG-----GAGCCCTTGCAAAAACACGGCTTGTGGCAT---TGGC-

ATACT 1299  
 ||| | ||| ||| | |||| | | || | ||  
 ||  
 Db 871  
 CTGTCTGGTTTTGGCTCGTGCCTTTGTCCATGTCTGGCTTAGTTCTCTCTGTCTATGCT 812  
  
 Qy 1300 TGCCCTTA-----CAGGTGG---AGTATCTTCGTCACAC--  
 ATCTAAATGAG 1341  
 |||| || |||| || || | |||| | || |  
 Db 811 TGCCTCTACCCCCACCGCCCCAGGCGGCACAAGTGT-  
 TTGGCCACACAAACTAGAGATA 753  
  
 Qy 1342 AAATCAGTGACAACAAGTCTTTGAAATGGTGCTATGGATTTACC-----  
 ATTCTTA 1393  
 || ||| || || || || | || || || || ||  
 |||  
 Db 752 GAAAAGGTGGTAAAAA--CTTCAAAC-TTTCTA--  
 AATTCTCCAACAGTTTATTTCTTG 698  
  
 Qy 1394 T-TATCACTAATCATC-TAAACAACCTCACT----  
 GGAAATCCAATTAACAATTTTACAAC 1447  
 | || || | || | || || | || | || | || |  
 |  
 Db 697 TGAATTTCTTC-  
 CTTCTTTAAATACTCCATTTTAAGAAAACAAAAAATTAATTATCTAA 639  
  
 Qy 1448 A---TAAGATAGAATGGAGACCTGAATAATTCTGTGTAATATAAATGG-  
 TTTATAA---- 1499  
 | |||| | | | |||| | | || || |||| | || ||||  
 Db 638 AGGCAAAGAATGGAAAGCAACCTTTGTGTTCTCT---  
 TATAATAACTGACTTCATAACTCT 582  
  
 Qy 1500 -----CTGCTTT-----  
 TGTACCTAGCTAGGCTGCTATTAT----- 1530  
 |||| || || || || | || || || || |  
 Db 581 CTCCAGCTGCGTTATGGGATGTGTATA-  
 AAAAGCTTCTGTTCTGAGAACAAGGAGCACG 523  
  
 Qy 1531 TACTATAATGAG-----  
 TAAATCATAAAGCCTTCATCACTCCACATTTTTCTTAC---- 1581  
 | | ||||| |||| | | || | |||| | || ||||  
 Db 522  
 TGCAGAAATGAGACGAAAAAATCCACTGACAGTATTCCATTACACAAATTACTTAAAAGA 463  
  
 Qy 1582 ----GGTCGGAGCATCAGAACA-----  
 AGCGTCTAG----- 1608  
 ||| ||| | |||| || | |||  
 Db 462 TTTTAGTC-  
 AAGCCCCTCAACAGATTCAATTTTAAAATGGCTTTTAGTTAAAAAATAA 404  
  
 Qy 1609 -----ACT--CCTTG-----GGACCG-----TGA---GTTCC-  
 TAGAGCTT- 1638  
 || || | | |||| || || || ||  
 |||  
 Db 403  
 ATTGAAAGTGCTTACCCAGTAAAAGAACCGAAGTAGTCCTGAACTGTTACGTAAGACTTT 344  
  
 Qy 1639 ----GGCTGGGTCT-----AGGCTGTTCTGTGC---  
 CTCCAAGGACTGT 1675  
 | ||| ||| || || | | | ||| |||

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|
Db          343
TTACAGTTGGATCTTTGTCAAAAGGGGATGGGGGTGATGGGAGAAAGCAGCAACGACAAT 284

Qy          1676 CTG-----
GCAATGACTTGTATTGGCCACCAACTG----- 1705
          |           || || || |   || || |   ||
Db          283 CAAAAAAGTTCGAGCTGCTGTGGCTAG---
AGGACAACCTTCTGTGTTTCCAGATAGGATT 227

Qy          1706 -TAGATGTATATATGGTGC--
CCTTCTGATGCTAAGACTCCAGACCT----- 1749
          | | |||| | |||| | || |   || || || | ||
Db          226 CTTGCTGTAGAAATGGAACCTCCAGC--
CAGCACAGCATCCTGTCCCAGTAGAGAAATGA 169

Qy          1750 -TTTGTTTTT-----GCTTTGC---
ATTTT- 1770
          |||| |           ||| |   |
||
Db          168
GTTTGTCAAGTTAAACAAAAAAAAAATTAGATACTGGAACCCAGGCTAGACGAGGTATTG 109

Qy          1771 -----CTGATTTTATACCAACTGTGTGGACTAAGAT-GCATTAAATA-
AACATCAG 1820
          | |||| | || | || | || || | |||| | || ||
|||
Db          108
AACCGCGCCAGATTTCTTGAGCCCTGTCTGCTCAGCTCGCATTCCAGTAGGCCAACAG 49

Qy          1821 AGTAACTC 1828
          |   |||
Db          48 TG---CTC 44

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RESULT 15

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US-10-478-914-62
; Sequence 62, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 62
; LENGTH: 1946
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-62

```

Query Match 36.7%; Score 3982; DB 1; Length 1946;



Best Local Similarity 44.6%; Pred. No. 3.3e-260;  
Matches 949; Conservative 0; Mismatches 680; Indels 498;  
Gaps 121;

Qy 1 CAGTTACAGG-----AGCACCACCAG----  
GGAACATCTCGGGGAGCCTGGTTG 46  
| | | | | | | | | | | | | | | |

||||  
Db 2 CCTGTACGGAAGTGTTACTTCTGCTCTAAAAGCTGCGGAATTCCTC---  
GAGCACTGTTG 58

Qy 47 GAAGCTGCAGGCTTAGTC-TGTC-  
GGCTGCGGGTCTCTGACTGCCCTGTGGGGAGGGTCT 104  
| | | | | | | | | | | | | | | |

|  
Db 59 GC--CTACTGGCTGAGGCTTATCTGACATC---TCATTGTC--  
CCCTGGTGTGTGTGTGT 111

Qy 105 -  
TGCCTTAACATCCCTTGCAATTTGGCTGCAAAGAAATCTGCTTGAAGAAGGGGTTACGC 163  
| | | | | | | | | | | | | | | |

||  
Db 112 GTGTGTGGTGTGTGTGTGTGTGG--GGTGTGAGTGTGGCAGAGAGGAAAGGG--  
GAGC 167

Qy 164  
TGTTTGGCCGGGCAGAACTCCGCTGAGCAGAACTTGCCGCCAGAATGCTCCTCCTGT-T 222  
| | | | | | | | | | | | | | | |  
Db 168 TGTTTGATT---CTGTAGTTCC-----  
TTTTCTGCCTTCTTCCTTTCTCTGTAA 213

Qy 223 GCTGAGTATCATCGTCC----TCC--ACGTCGCGGTG---CTGGTGCTGCTG---  
TTCGT 270  
| | | | | | | | | | | | | | | |

||  
Db 214  
ACTTTGGATACTTATCCAAATTACTAACGGCAGATTGAGCCCTATGCAGATGGCATGTGT 273

Qy 271 CTCCACGATCGTCAGC---  
CAATGGATCGTGGGCAATGGACACGCAACTGATCTCTGGCA 327  
| | | | | | | | | | | | | | | |

||  
Db 274 CTGTGACAACCTCTGCTCTCCACATCTCTTGGGC-CTGTTTAC---CTGCGCTCC--  
CA 326

Qy 328  
GAACTGTAGCACCTCTTCTCAGGAAATGTCCACCACTGTTTCTCATCATCACCAAACGA 387  
| | | | | | | | | | | | | | | |  
Db 327 GAGCCTCCGC-CAGCATCC-CAG--AATCTCCATCCCCATCTCTCA-  
CTTATACACACAT 381

Qy 388 ATGGCTGCAGTCTGTCCA--GGC--CACCATGATCCT--  
GTCGATCATCTTCAGCATTCT 441  
| | | | | | | | | | | | | | | |

||  
Db 382 CAGTCATCGGT-TATCCATTAGCTAAACCGCCTTCCTTAATAGCTTTAC-  
ACTGTTTGCT 439

Qy 442 GTCTCTGTTCTGTTCTTCTGCCAACTCTTCA-----CC-----  
CTCACCAAGGGGGGCA- 491

|||  
 ||  
 Db 440 TTCTCTGGAAC--  
 ATTTTGTAGTTAAAATTTTCATAATGCAGTTGCACACAAATGAAGACAC 497

Qy 492 GGTT--  
 TTACATCACTGGAATCTTCCAAATTCCTTGCTGGTCTGTGCGTGATGAGTGCTGC 549  
 |||  
 Db 498 AGATGGCTGCATCCTCCGTCTCTTCCCCTCGTTTACAGG-----  
 AAGCTGC 543

Qy 550  
 GGCCATCTACACGGTGAGGCACCCGGAGTGGCATCTCAACTCGGATTACTCCTACGGTTT 609  
 |||  
 Db 544 GG-----ATCAGGGAGG-----GGTGT-----  
 TAGGGTTACCCACATGGTAA 580

Qy 610  
 CGCCTACATCCTGGCCTGGGTGGCCTTCCCCCTGGCCCTTCTCAGCGGTGTCATCTATGT 669  
 |||  
 Db 581 GGGCAGAGACAAG----AGGGGACC--  
 CCAGTTTTCCATGCTGCACATGGTCATTGCTGG 634

Qy 670  
 GATCTTGCGGAAACGCGAATGAGGCGCCAGACGGTCTGTCTGAGGCTCTGAGCGTACAT 729  
 |||  
 Db 635 GGAC-TGAGGTTT-GCACAT---CACCCTGCC---CTGTT---CTC---  
 CCTCCGC 676

Qy 730 AGGGAAGGGAGGAAGGGA--AAACAGAAAGCAG-----  
 ACAAAGAAAAAGAGCTAGCCC 782  
 |||  
 Db 677  
 TGGGGAGAAAGTCAGGGATGGAGCAAGCTGCAGCATCTTCTGAAAAAGAAAAGGTGGCCT 736

Qy 783 AAAATCCCAAACCTCAAACCAA-  
 ACCAAACAGAAAGCAGTGGAGGTGGGGGTTGCTG---- 837  
 |||  
 Db 737 TGTCTCCAGGTCTCCCCTCAAGTCCACCTTCCCATAGT-----  
 TTTCTGCCAC 785

Qy 838 -----TTGATTGAAGATGTATATAATATCTCCGTTTATAAAACCTATTT---  
 ATAACAC 889  
 |||  
 Db 786 TTCTCTTGATTTTC-CTCTCTGCCACTTCTCTTGATTTT----  
 CCTCTCTGCCACTTCTC 840

Qy 890 TT--TTTACATATATG----TACATAGTATT--  
 GTTTGCTTTTTATGTTGACCATCAGCC 941  
 |||  
 Db 841 TTGATTTTCCTCTCTGCAGCTGCTTTGAGGTGGGTTTTCTCCAGATGCACACTTTC--  
 CC 898

Qy 942 TCGTGTTGAG-CCTTAAAGAAGTAG-----CTAAGGAACTTTA-----  
 CATCC 983

```
| |||
Db          899
CTGCTTTGCGTCCTTATTCTGGTAGAAGCACAAATCTAAAGCTCATTAAAGGGAACATAATCA 958

Qy          984 TAACAGTATA---ATCCAGCTCAGTATTTTT-----
GTTTTGTTTTTGTTTGTGTTG 1032
      | ||   |       | ||||| |   |           |         | || |   ||
|
Db          959
ATTCTGTGCATGGCGCTAGCTCAGCAGATCACCACACAGGCAGCACTATTAGCAAGTCGG 1018

Qy          1033 TTTTGTTTTACCCA--GAAATAAGATAACTCCATCT--
CGCCC----- 1071
      | ||   || ||   | | |   || | || || |   || ||
Db          1019 ---
TGCTTAACACATGGCACTTCCATGAATCGATATGGAGCCCCGTGTAGAACAAGGCATG 1075

Qy          1072 -----CTTCCCTTTTCATCTGAAAGA-AGATACC-----
TCCCTCCCAGTCCAC 1113
      | || || || |   || || |   || | ||   | || || |
Db          1076 GGTTTTTTTCTCTTCCCATTA---
GAAAAACTGATGCCAAAAATAACTTCTCAGATATT 1132

Qy          1114 CTCATTITAGAAAACCAAAGTGTGGGTAGAAAACCCCAAATGTC--
CAAAAGCCCTTTTCTG 1171
      || |   |   ||   ||   || | || |   || | || || |   || |
|
Db          1133 TTCAAGT--
ATGACTTTTATGAAGGGAAAAAGCATTTTTGTTTGCAAAATCATGCTTCAG 1190

Qy          1172 -GTGGGTGACCCAGT-----GC-----
ATCCAACAGAAACAGCCGCTGCCC 1211
      |   ||   || || |   ||   | |   | |   | |   ||
Db          1191 TGCAGG----
CCAGTTGTGAATTGTGATGGCTTTTATTCTCCTGGGGCTGTAACTTTAA 1246

Qy          1212 -----GAACCTCTG---
TGTGAAGCTTTACGCGCACACGGACAAAATGCCC 1254
      | || || |   |   | | | | || | || |
|
Db          1247 GGGTTTAGAATTTGGAACCACAGCCTAGCTAATCATGACACACACACACA-----
CAC 1301

Qy          1255 AAACCTGG--AGCCCTTGCAAAAACAC--GGCTTGTGGCATTGGCATAAC---
TTGCCC--- 1304
      | ||   |   | | | || | || |   || || | || |
Db          1302
ACACATGCACACACATACACATACACAAAGCATCACGAAGAACCATACAAATTGTACATT 1361

Qy          1305 ---
TTACAGGTGGAGTATCTTCGTACACATCTAAATGAGAAATCAGTGACAACAAGTCT 1361
      || || | || |   | | || || || || | || |   || |
Db          1362 ATTTTACACATGGA-----GGCTCAC-
TCTAAAATAGATACCATTTTAAATATTAAC 1412

Qy          1362 TTGAAATGGTGCT-ATGGATTTACCATTC-----CTTATT-----
ATCACTAATC-A 1406
      |   || | || || | || |   || || |   || || |
Db          1413
```

TAAAACTTGTGCTCATTGTATGTTTCATTCTATATGTACTGATTTGTTATTACATTTCTT 1472

Qy 1407 TCTAAA-----CAACTCACTGGAAATC--CAATTAACAATT-----  
TTACAACATAA 1451  
|| ||| ||| | || | | ||||| ||| || | |||

Db 1473  
TCAAAATCGTTCAAATTTCTAGCCACATCAATTAAATATTAATAGTACTTTCTACA--- 1529

Qy 1452 GATAGAATG-GAGACCTGAAT-----AATTCTGTGTAATATAAATGGT-TTAT---  
AAC 1500  
| ||| | | | ||| || ||| | | | |||| ||||

||  
Db 1530 ---AACATGAGCGCACAAAATAAATTCAAATCTAT-  
TTTTCCCACTGGTGTATCAATAC 1585

Qy 1501 TGCT-----TTTGTACCTAGCTAGG-----  
CTGCTATTATTACTATAATGAGTAAATCA 1549  
|||| |||| || ||| | || | ||| || |||| |

|  
Db 1586 TGCTCATACTTTGTGTAAGTATCACATGATCTTAAAC--  
TAATGTCACATACT 1643

Qy 1550 TAAAGCCTTC-----ATCACTC--  
CCACATTTTCTTACGGTCGGA 1588  
||| |||| | ||| | |||| |||| || |

Db 1644  
AAAAAGCTTCTGAGGCAAATTGTAGAAAGAACTCTCAACATCATTGTTCTACTGGAC--- 1700

Qy 1589  
GCATCAGAACAAGCGTCTAGACTCCTTGGGACCGTGAGTTCTAGAGCTTGGCTGGGTCT 1648  
|||| | || | | || || | || | || |

|  
Db 1701 -----AACATAC--ATAAAATTATT-----TTAC-  
AGTGATGGGAGAGAAAT 1739

Qy 1649 AGGCTGTTCTGTGC-----CTCCAAGGACTGTCTGGCAATGACTTGTATTGGC----  
CA 1698  
|||| || | | || | ||| | | || || | ||| ||||

|  
Db 1740 AGGCTCCTC-ATCCTAAAAGCTGCGAAGACAG--  
TAGCGGTGCCGTGTTTGGCGTTACT 1796

Qy 1699 CCAACTGTAGATGTATATATGGTGCCCTTCTGATGCTAAGA---  
CTCCAGACCTTTTGTT 1755  
|| |||| ||| || | || | || |||| | ||||

Db 1797 CC-CCTGTGGAT-----CCCAGC-  
GACGGGTGGATTTCTCCTGTGCTTTATCA 1842

Qy 1756 TTTG-CTTTGCATTTTCTGATTTTATACCAACT-----GTGT---  
GGACTAAGATGC-- 1803  
| | | || | | | || | |||| |||| ||| ||

Db 1843  
TCAGACACAAAATGGACAAAATGGACAAAATGGACGAGTGTGAGGGACACAGAGGCTG 1902

Qy 1804 --ATTAAAATAAACATCAGAGTAACTC 1828  
| |||| ||| | | | | |

Db 1903 CTGTAAAAAAAAAAAAAAAAAGGCCAC 1929

Search completed: March 9, 2010, 15:52:21

Job time : 10.2568 secs

GenCore version 6.3  
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OM nucleic - nucleic search, using sw model

Run on: March 9, 2010, 15:51:16 ; Search time 1 Seconds  
(without alignments)  
1134.946 Million cell

updates/sec

Title: US-10-572-905-29  
Perfect score: 38331  
Sequence: 1 cccagttgtctgcgggctgc.....taataaagcttgttttctcc  
6734

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 417 seqs, 79705 residues

Total number of hits satisfying chosen parameters: 834

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : 7335755.seq:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being  
printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
-----						
1	8423.5	22.0	3589	1	US-10-478-914-21	Sequence 21,
Appl						
c 2	8078	21.1	3589	1	US-10-478-914-21	Sequence 21,
Appl						
3	7966.5	20.8	3210	1	US-10-478-914-4	Sequence 4,
Appli						
c 4	7277	19.0	3210	1	US-10-478-914-4	Sequence 4,
Appli						
5	6088.5	15.9	2437	1	US-10-478-914-61	Sequence 61,
Appl						
c 6	5858	15.3	2437	1	US-10-478-914-61	Sequence 61,
Appl						
7	5811	15.2	2495	1	US-10-478-914-20	Sequence 20,
Appl						

c	8	5722	14.9	2495	1	US-10-478-914-20	Sequence 20,
Appl							
c	9	5407	14.1	2336	1	US-10-478-914-57	Sequence 57,
Appl							
	10	5370.5	14.0	2336	1	US-10-478-914-57	Sequence 57,
Appl							
c	11	5350	14.0	2120	1	US-10-478-914-64	Sequence 64,
Appl							
	12	5309	13.9	2120	1	US-10-478-914-64	Sequence 64,
Appl							
	13	5280.5	13.8	2198	1	US-10-478-914-17	Sequence 17,
Appl							
c	14	5272.5	13.8	2198	1	US-10-478-914-17	Sequence 17,
Appl							
c	15	4899.5	12.8	2083	1	US-10-478-914-3	Sequence 3,
Appli							
c	16	4797	12.5	2022	1	US-10-478-914-60	Sequence 60,
Appl							
	17	4790	12.5	1946	1	US-10-478-914-62	Sequence 62,
Appl							
	18	4750	12.4	2083	1	US-10-478-914-3	Sequence 3,
Appli							
	19	4621.5	12.1	2022	1	US-10-478-914-60	Sequence 60,
Appl							
c	20	4422	11.5	1946	1	US-10-478-914-62	Sequence 62,
Appl							
c	21	4264.5	11.1	1813	1	US-10-478-914-63	Sequence 63,
Appl							
	22	4142.5	10.8	1813	1	US-10-478-914-63	Sequence 63,
Appl							
c	23	2372.5	6.2	1020	1	US-10-478-914-68	Sequence 68,
Appl							
	24	2353.5	6.1	889	1	US-10-478-914-5	Sequence 5,
Appli							
	25	2291	6.0	867	1	US-10-478-914-6	Sequence 6,
Appli							
	26	2266	5.9	1020	1	US-10-478-914-68	Sequence 68,
Appl							
c	27	2243	5.9	867	1	US-10-478-914-6	Sequence 6,
Appli							
	28	2220	5.8	816	1	US-10-478-914-15	Sequence 15,
Appl							
c	29	2214	5.8	816	1	US-10-478-914-15	Sequence 15,
Appl							
	30	2193	5.7	938	1	US-10-478-914-69	Sequence 69,
Appl							
	31	2175.5	5.7	794	1	US-10-478-914-13	Sequence 13,
Appl							
	32	2173	5.7	717	1	US-10-478-914-42	Sequence 42,
Appl							
c	33	2172	5.7	938	1	US-10-478-914-69	Sequence 69,
Appl							
c	34	2171	5.7	889	1	US-10-478-914-5	Sequence 5,
Appli							
	35	2167.5	5.7	889	1	US-10-478-914-9	Sequence 9,
Appli							
c	36	2155.5	5.6	839	1	US-10-478-914-16	Sequence 16,
Appl							
c	37	2155	5.6	909	1	US-10-478-914-67	Sequence 67,
Appl							



```

Db          33  -----CGAGGGGCT-CCGTGTGTGCGCCCTGTCT-----
TGTCTGGC 68

Qy          289
AGAACTACATTCTGCCCACAGTTTAAACCCTCTCCTGCCCAGTGTGCCGCCAGACCTCCA 348
      |  | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | |
Db          69  CGTCCT-CATCCCTTCCCCCA-----CC--CCC----TGCCGCCA---
CTCCG 106

Qy          349
TCCTGCCCCGAGAAAGGGGTGGCCGCGCTCCAGAACAAATTTCTTCATCACAAACCTGATGG 408
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| |
Db          107 ACCCGCTCCCAA-----GTGGCTTCACAATAG-----TCGGTCTCT--
CGG 145

Qy          409 ACGTGCT-
GCAGCGAACTCCAGGCAGCAACGCTGAGGAGTCTTCCATCCTGGAGACAGTC 467
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          146 CGGTGTAGGCTGCG--CACCAGGT--CCACACTTAAGCG----
AAATCAAGGAGACC--C 195

Qy          468
ACTGCTGTGGCTGCGGGAAAAGCCTCTCTCTTGCCCAAACCACGATGGGAATGTGATGGAA 527
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          196 CCTTCT-----ACTTCTACCTT-----
TGGG----- 216

Qy          528 TTTTACTGCCAGTC-
CTGTGAGACTGCCATGTGTGCGGGAGTGCACGGAGGGGGAGCACGC 586
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          217 -TTTGGTGC---TCAATGCGAAGCTGC-----TGCA-----
ACTC 247

Qy          587
AGAGCACCCACAGTTCCACTCAAGGATGTGGTGGAACAGCACAAAGGCCTCGCTCCAGGT 646
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          248 AGA-CACGCCTAAG-TCAACTCATG-----CAGAAAAAGG-----
AGA 283

Qy          647
CCAGCTGGATGTGTCAACAAAAGGCTCCCAGAAATAGATTCTGCTCTTCAGTTCATCTC 706
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          284 AAAGTT--TTG--GTATACAAA-----
TGCTC----- 306

Qy          707
TGAAATCATTTCATCAGTTAACCAACCAAAAGGCCAGCATCGTGGATGACATTTCATTCCAC 766
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | |
Db          307 -----TCAGT---CCAGCCAGA-----
CAC 323

Qy          767
CTTTGATGAGCTCCAGAAGACTTTAAATGTGCGCAAGAGTGTGCTGCTTATGGAATTGGA 826
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |

```





TAGTA----- 544

Qy 1425  
GTGTCTCCCAACACAGAAGGCGTGAAGAGGCGCGTTAAGTCCCCGGGGAGCGGCCACGTC 1484  
||| | |||| |  
Db 587 ATGTTTACCACC-----  
TG----- 600

```

Qy          1545
CCCATCGAAGACGATTGATCTTTTCGAGTGGGTACCAAAGGAAGAAATAAAGGAGAGTTT 1604
          |||  |||          |||  |  ||  ||  |||
|||
Db          626 ---ATCAGAGA-----TTTGTGTTGGAGACAA-----
ATTTT 655

```

Qy 1664  
CAACCAATGTGTGCAGATATTTTCCAATGATGGCCAGTTCAAAAGTCGTTTTGGCATACG 1723  
| | | | | | | | | | | | | |  
Db 690 CTAC-----GAGGAAGGTTT--  
AATGAAAGAAGGTT----- 718

```

Qy      1784 CATA-
ATCATTGCCGATTATGATAATAAATGGGTCAGCATTCTCTCCTCCGATGGGAAAT 1842
      | | | | | | | | | | | | | | | | | | | | | | | |
||
Db      764 TACAGAGCACTAC--ATTCTTTTA-----TC----
TTTTTTGCTCCACAATGTACAT 808

```

Qy 1903  
ATGGGCACATTATTGTTGTGGACAACAAGGCGTGCTGCGTGTTTATCTTCCAGCCAAACG 1962  
| | | | | | | | | | | | | | | | | | | | | |  
Db 849 GAAGGCAGGATGGTTATATGGAATAAAAGGCGGACTGC-----  
ATCT----- 890

Qy 1963  
GGAAAATAGTCACCAGGTTTGGTAGCCGAGGAAATGGGGACAGGCAGTTTGCAGGTCCCC 2022  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 891 -GTATGTAGT-----GAAATTG-----  
CCCC 910

Qy 2023 ATTTTGCAGCTGTAAATAGCAATAATGAGATTATTATTACAGATTTCCATAAT---  
CATT 2079  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 911 AGTT--CAGAGTTGAAT-----  
GTTTATTATTAAAGAAAAAGTAATGTACA-T 956

Qy 2080  
CTGTCAAGGTGTTTAATCAGGAAGGAGAATTCATGTTGAAGTTTGGCTCAAATGGAGAAG 2139  
| | | | | | | | | | | | | | | | | | | | | |  
Db 957 ATGGCTGGATTTTTTTGCTTGC-----TATTC--GTT----  
TTTGTGTCACCTGG----- 1000

Qy 2140 GAAATGGGCAGTTTAATGCTCCAACAGGTGTA-  
GCAGTGGATTCAAATGGAAACATCATT 2198  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1001 --CATGAGATGTTTATT--TTGGACTATTGTATATAATGTATT-----GTAATAT--  
TT 1048

Qy 2199 GTGGCCGACTGGGGAAACAGCAG-  
GATCCAGGTTTTTGATGGGAGTGGATCATTTTTTGTG 2257  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 1049 GAAGC-----ACAAATGTAATACAGTTTTTATTGTG-----  
TTACCATTGTGTT 1092

Qy 2258  
CTACATTAACACATCTGCTGACCCACTCTATGGCCCCCAAGGCCTGGCCCTAACTTCAGA 2317  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1093 C-----CATTTGCT-----  
TCTTTG----- 1107

Qy 2318 TGGTCATGTTGTGGTTGCAGACTCTGG--  
AAATCACTGTTTCAAAGTCTATCGATACTTA 2375  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 1108 -----TATTGTTGCA---TTTAGTACAATCAGTGTTT-----  
AAACTTA 1143

Qy 2376  
CAGTAATGGTGGGCAGGTGGATACCCGCTTCCATGGTCTTGCAGTATAAACTGGAATGGA 2435  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1144 CTGTAT-----ATTTATGCTTTC-----  
TGTA 1165

Qy 2436  
 TTTCTCAATGCGGGACCAGATTATGACTAGAGTTTTTATGCCAGAAGGAATCATTGGTGA 2495  
 ||| ||||| ||| |||||  
 |||  
 Db 1166 TTT-----ACCAG-----CTA---TTT-----  
 AATGA 1186

Qy 2496  
 ACTTTCCAAGGTTATTTCTGAATGTAACAATTTCTTAAAAATGACTTATCCAATTTCTG 2555  
 | ||||| ||| || || || ||  
 Db 1187 GC-----TGTAAC--TTTC--  
 TAGTAAAGAATT----- 1210

Qy 2556  
 TATTTACCTTTAGGGTTAAAAAACTCTTCTACTGAATCTATAAAACTGCAGTTTTA 2615  
 | || |||| ||| ||| || |  
 Db 1211 -----GAAAAGCAAATCTC-  
 ACTAATGATAC----- 1235

Qy 2616  
 CATCTGTGAATATGGCTTAAGGGACAGGATTTATGTAGCTAACTAATTTTGCAAATCA 2675  
 |||| ||| |||| ||||  
 ||  
 Db 1236 -----ACAG-----ATAGATAAA-----  
 GCAAGTCT 1256

Qy 2676  
 AACAGACACTTAAAAAACTAGCATATGTAAAGGTATTCGTTAATCCTGTGAATGGTAGC 2735  
 | || ||| ||||| |||| | | |||| | | | | | | | |  
 |  
 Db 1257 ATCA-ACA-TTAAAAATACTA--  
 AAAAATAAAGACACACACAGAGCATTTTAGTGACATC 1312

Qy 2736  
 TTTTGCACAGAACTTCCAAAAGCAAAACAAAAACAAAATCTATTGTAGTTATATACTTCA 2795  
 ||| | | || | | |||| ||| |||  
 Db 1313 -----CACTACTTATTGCCGCTATGAGTTAGAGTCTATCAGTGTT-----  
 CTTGT 1357

Qy 2796 TTTAACCTAGGTCACAAGACCCAGGGAATCTTCTAACCTCACTTTTACAGTAGG-  
 TATTA 2854  
 | ||||| ||| ||| ||| || ||  
 |  
 Db 1358 TATAACC-----CCCT-----  
 ATTTTCAGGGGGTTAAAA 1386

Qy 2855  
 CTCTTGTGACATTTTTTTGGTTATCAACAATAAATAAATTACTTTGGAAAAAGTAAG 2914  
 || | | | | | | | ||||| |  
 |||  
 Db 1387 ATC-----AGCTTTAAAAAATACATAAAATTTTCAT-----  
 CTTAA 1424

Qy 2915  
 GCTGTCTTGCAAAATGATCCCAGCTCTGATTAGCAGCCCTCTGGAGTTCAGAACTTAAGT 2974  
 || ||| || | || || | ||| || ||| | | ||||| |  
 Db 1425 GC--ACTTTTATTTT-ATACCAACG-TGAAAAG-TGCCATTTTTTAG--  
 AATAACTTTA-A 1476

Qy 2975

ATCAGTGCAAATTTCTCAACCTTTCTGGGTTAGACAAAGATCCTTTTTTGTGTGTTCTTT 3034  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1477 AGCTTAACAGGTTT-----CCTTT-----TAATATCCTTTTTT-  
 TGTGTGCTCT 1519

Qy 3035  
 TCACCACCCCTTTGGCTCACCTTGATACAGCAAACAAAGTACTTCTTCAGGGAAACCTGA 3094  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1520 TTACTTACACAATGGCT----TTGTTT-----  
 TGCTTTTTTCAGCCACACC--- 1560

Qy 3095  
 AATTTCTAATGCCTTGAAAAGCATATTACAAAAGTAATGCTACCTTTTGGGAAACAACT 3154  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1561 -----CCTT-----ATGTGAAGTACTAGTGCC-  
 TTTGGGTATCA---- 1590

Qy 3155  
 GCCCGTTAACTCCAGATCATTGCACTGGAATGTAATCAAGAAAGTTAGTCATGTTTTAT 3214  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 1591 ----CGTAA-----AATTTTTTCCAAAGGGTTA-----  
 CTTTAA 1620

Qy 3215  
 GTACCATGTTTTACACGTGTCTCTTCTCTTCGACTTCCTGAAAGCGAAAGCTTTACCTC 3274  
 | | | | | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1621 AAATC-TGTTACCACA-----  
 ATTATGAGATGATTTTTTAAGTGATAAATAAACTT 1670

Qy 3275  
 CTGCAAATGTCAGCACATGTAGTAGGACACCAGTATCCTAGGACAGAGAGCCATAAGTAG 3334  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1671 CT-----TCTTGATATA-----  
 ATTCT-----G 1688

Qy 3335  
 CCCTTTGGGAGGACTGATGGTGTCAACCAAAGGCATGTGATTGATTAATGATTCCCCCTTA 3394  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1689 CCC-----AGATCT-----  
 CTCC--- 1701

Qy 3395  
 GAAAGCAAGTGTTACCAAAGTTGTGTTATCTTGAAAGCATTACAGGTAAGGGCATGTTAT 3454  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 1702 -----ACAAGAGCTGAG-----GGTTTCATAACT-----  
 TTAT 1729

Qy 3455  
 GGTATTTTATCATTGTTTAATGAATAGTAGAGGTGTCAAGGGACTATGTATACATGATTA 3514  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 1730 GG--CTTAATAAATGTAT-----GACACTG---  
 AAAAGATTT 1761

Qy 3515

GGGTAAGATAGAATGTATTATATATATATATATATATACACACACACATATATATAGCTG 3574  
 | |  
 ||  
 Db 1762 GAGTG-----  
 TG 1768

Qy 3575  
 AATCTTTGGTGTATTGAAATAGGCAGCACTCTGAAAGACAGAAGCTTCGTCCAGCCACTC 3634  
 | | | | | | | | | |  
 ||||  
 Db 1769 AATCT-----ACTGAAA-----  
 TCACTA 1786

Qy 3635  
 TTCAGCACATTCTTTACTAAGCAGTTTAAAGCCGTCCTAGTGAGCAAGCCCTAAAGCA 3694  
 | | | | | | | | | |  
 Db 1787 TAATGCACA-----  
 TTGAAGCTATGATGGT----- 1811

Qy 3695  
 GATTTAATTTTTGCCATTTTCCAAGAATGACGGTGGTGGCTTTTAGTCAGAAAATGGCCT 3754  
 | | | | | | | | | |  
 Db 1812 -ATTTGAGTAGT-----  
 GAGGTTACTTTTGATCGGA----- 1841

Qy 3755  
 TCTGTGCTTTCAAAAAAAAAACAAAAAAAAAACCACACACACATAAAAAACCCAACAG 3814  
 | | | | | | | | | |  
 Db 1842 ----GC-----AACATAAT-----  
 GCTCATAGAA----- 1861

Qy 3815  
 GTCAAAATAAAAGTTGAAC TTGAGTTACATTTAATTTAAATATAAATGCATTTTGAGAAA 3874  
 | | | | | | | | | |  
 |||||  
 Db 1862 -TC----TTCTAGAAGAA-----  
 GAGAAA 1880

Qy 3875  
 TGTTAAGAACAATTTAGTCAATCGTTTCATCTGTCATTGGTACTGTAAAATAAGCTGTGGT 3934  
 | | | | | | | | | |  
 Db 1881 -----CAAAGGGATTG-  
 ATAAAATGCTGAGAA 1906

Qy 3935 CTATTTCCACTGTTTAATTTTCTACTCAGT-  
 TCTACCAAATAGGATGTCATGTTTGACAT 3993  
 | | | | | | | | | |  
 |||||  
 Db 1907 CTAGTG--ATTATATATTTTCT-----GTATTTACC-----  
 TGACAT 1942

Qy 3994  
 TTTTGATAGTGACTTTGGGGTCTTCTTCACTGAAAGCACCTTAGAACTGTACTATAAGAA 4053  
 | | | | | | | | | |  
 |  
 Db 1943 TTAT-----TTT-----  
 AATGTTCAAAAAGTA 1964

Qy 4054  
 AACATTTCCCCTATGTATAATTATATGAATGTGATGTTTATTGCTTATTAATTTATAATT 4113

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||  
Db 1965 AACACTT-----TAAGTTTGATGTGTTTTACTCTCTCATTGTT--  
TT 2004

Qy 4114  
CAGTCATTCTCTATATAGGACTTCTTAAAATTTAGAAGGGAAATCTAGCTACTTCAAATT 4173  
||| ||| | | | | | | | | | | | | | |  
Db 2005 AAGTAATT-----GCCAACTCAGAA-----  
TACATCA---- 2031

Qy 4174  
GTCTGTAAATTTATTATGCCCAAATCAACCTCTGAAAAAGGTTTTTCCAGGAAGATTT 4233  
| | | | | | | | | | | | | | | | | |  
Db 2032 -----TTCTTAGG-----CTGAAATTT-  
GTCTTTCCA----- 2057

Qy 4234  
ACATTTAGGTTTAATATTTTTTTTAGTTAGGTAGAGTTTTAAAAAATACTTGAGCCTGTCC 4293  
| | | | | | | | | | | | | | | | | |  
|  
Db 2058 -----TTTTTTA---AGGTG-----AAATAGTACT---ACCT-  
TAC 2086

Qy 4294 GTGATAAAGCTATAAAATTCAATAACTTTTTAGAATGTTAAATGA-  
AGACACTGTTTCCT 4352  
| | | | | | | | | | | | | | | | | |  
|  
Db 2087 GTGAT--AGCATACAAAGAAGAAAGC--  
TCTAGAAAGAGAAATTATGGAGAATGATTATT 2142

Qy 4353 AACATCAGTGAGATACATCTTTGAATTTAAACAT----  
TCATATTTACTGAGTACCTACT 4408  
| | | | | | | | | | | | | | | | | |  
Db 2143 TAAAT-----  
TACAATTAAGGAAATGAGAATATGATCCCCTCTTCCGAGTTGC---- 2190

Qy 4409 AGGTACCAAGTACT--  
CTTTTAGGCACTGGAAATACAGTGATGGACAAAACAGGTAAAAA 4466  
| | | | | | | | | | | | | | | | | |  
Db 2191 -----  
CCACAACTTGCTTCTTTGCTTT----- 2213

Qy 4467  
ATCGCTGCCCCCTCAGAGCTGACATTCTGGGGTGGGAATTTTCATTTTGCCACGTACTAAC 4526  
| | | | | | | | | | | | | | | | | |  
| | | |  
Db 2214 -----TGCTCC-----CTGTAAT-----AGAACTACTTTTCAACAAAT-  
CTAA- 2250

Qy 4527  
GTTCTGCACAAAAGACAGGCTAGACTCTTGTCTAGATTGTTTAAAAGAACTTTTCAAAT 4586  
| | | | | | | | | | | | | | | | | |  
Db 2251 -TTTTGCAC-----GGC---ACCGTTAACCATA-----  
TTTTAC-- 2281

Qy 4587  
TGGTTACATTAATTTTAGTTTATTTTACAAAGTAAAAATGGCTTTTTATTTAGATTCTTT 4646  
| | | | | | | | | | | | | | | | | |  
| | |

Db 2282 ----TACAGCAAACCTTAGT-----  
GCTATGGGTTTTCTTTTTCTTTGTTT 2322

Qy 4647  
CTGTCCCAGGCTGTTGATCTTAAACTAGTTGATTTAAAGAGTTTTTTTGCACAACATTT 4706  
| | | | | | | | | | | | | | | |

Db 2323 TTTTC-----TTGATC-----ACTTGT--ATAGGAA-----  
ACAACATTT 2355

Qy 4707 --CAATTATATTTGTGAACCTAGAAATTAACCTACAATCTAACCAGCCATCATAT-  
CATA 4763  
| | | | | | | | | | | | | | | |

Db 2356 TCCAGTGTTATTTG----CATA-----  
TATATTTTGTCTTCCAATATATGCATT 2401

Qy 4764 TCCTATCAGGCTAGATATCTCAATAGTAGA-CTGAATAC-----  
AAAGCTAATTTTTT 4815  
| | | | | | | | | | | | | | | |

Db 2402 ACAGAT-----  
GAAATTAATGTTTATACCTGAATTCTTGGGTTGGGGCCAAATATT 2454

Qy 4816 TTACATGTCAATATTGGCACAACTGGAATGAAAGAATAGTTTGATTCAGACC--  
TGCTC 4873  
| | | | | | | | | | | | | | | |

Db 2455 AAGC-TGAAAATAATG-----CTGGTGTGGA-----  
TTTGTTTTAAACAAAGCTT 2499

Qy 4874 CACTATGTGTTGCTAAAACACATGCTATGAGCA-  
CTCGAGGAAACACTATATTTTTTCCA 4932  
| | | | | | | | | | | | | | | |

Db 2500 TATTATG-----AACATGC-ATGTGAATCTGGATATTGC-  
CTCTTATTTTAAAG 2546

Qy 4933  
AAAAATATGTGATTATATATGTTAAAGTATAGATAACATTTACACTTGGATACATATGT 4992  
| | | | | | | | | | | | | | | |

Db 2547 AAAA-----TGGTTCTGTG---AAAAGT-----  
GAATGATATGT 2577

Qy 4993 GCATTTAC-  
TGTATTTCTTGGTAAGCATATTTTTGGGGGAAAGTGCTGCTGATATGATAC 5051  
| | | | | | | | | | | | | | | |

Db 2578 ATTTTCCAAATGCTTCATGGTTAG-----GAGT-CTTC-----  
AAGTTCC 2617

Qy 5052  
AAGTAGACAAAATTTAAATGAAATTTTGTACATTCTATGGAAAATGGTTTCTGGTAAAC 5111  
| | | | | | | | | | | | | | | |

Db 2618 ATGTTCCCCAGATTTGA-----  
GATATAC 2641

Qy 5112 T-  
GAGAAGGATATTAAATAAGTGGCTTTTTTCTGGGCTACCATTATTGTTTGATTTCTC 5170



|

Db 2642 TAAAGAAAAGAAATTCAA--AAGTAGCTATTT--GGGGC--  
CCACAAAAATAACTATTATT 2695

Qy 5171 TTTGTCAAGTGTATAGAACCTGTCA-  
TACATTCATGATAAGTAGCACTGAAAAATTACTC 5229

Db 2696 TTAGCC-----TTAGAGCCTTACACTTGTTTCATGAAGAGAA-----  
AGGACTTGCAT 2743

Qy 5230 ATTCAAATTTCCC-----  
CTGGGCACGTAAGGC AAAATATTGCCGGTTGGGATTTCAAGGT 5285

Db 2744 AACCAAAATAAACAAAGCAAGACAAATTA---AAAATAT-----GTGGGGG---  
AGAGAT 2792

Qy 5286  
CAGTGACGACGCATTTCTCCAGTACAGACCCCCCAGCCCCCTTGCTGGACATGGGGA 5345

Db 2793 CAGTGAAAAGTGGTTT--TCTTAATGCAGCCCTGCTGGTCCCCATT-----  
AAC----- 2839

Qy 5346  
GGCAGAGAGTCACTTGACCATCCAGAAATACATGACTACAAGTCCTTTATGACTGTTTGC 5405

Db 2840 -----AATTGCTTGAAATTC-----ACATGGATGTAA--AATTATAA----  
TTGT 2878

Qy 5406  
CATTTTTTTTAAATGGTACTTAGTATTTTGATCAAACCTTTAGTCTCCAGAACTAAACAAGT 5465

Db 2879 CA-----GGATCTTATTTCAGATGATCT---TTTA-----  
AGGTTTAA----- 2912

Qy 5466  
CCCTAAGTTTCCTTATTTTAATTTACTGTGACTAGATTTGAAGCAAATAAATACTCCAGA 5525

Db 2913 --CTGGTTTGTCTTTTGTATCTA-TATGTCAAAT-----  
ACTTGTAAT----- 2956

Qy 5526  
TCCATGCAGCTAGAACACACTTGCTTCCACTACTAAATATACAGGGTATGTCCTAACATG 5585

Db 2957 ----TG-----GGAACAAACTTCTCTCAGCTTCT-----  
TG 2983

Qy 5586  
GAGTTAACTGGAATAGCAGTACACTAGCAAGTATCTGTGAATCCTTAGCACTGACGGGTT 5645

Db 2984 AAGTT-----GTTT-----AACT-----  
ATCCTTGCCACTGGAAG--- 3013

Qy 5646  
AACAGAAATGCTTTGGTAATACCTACTTAGTTAATTGGAGGAAGTAGTAAATAAACATTA 5705

Db 3014 ACCAAACAAGGTTT-----TCACTGCTTTTTCTTTT-----  
 ACATAA 3050

Qy 5706 GGTAATCTGCAGATTACTTCAAATGGGAAAAATCTTTTTG-  
 TAGACTCTATAGTACCCTC 5764  
 || ||| ||| ||| ||| ||||| || | | | ||| |  
 |

Db 3051 --TATGCTGAGAATTATTTCTTATG-----  
 CTTTTTACTACAAACAAAATTACTCAC 3100

Qy 5765 TCTATTCAGTCTTCTGAA--  
 AAGGGAGGAGTATTTTTAGTTTGACAATTTAATAATTT 5822  
 || || | ||| | | | |||| || |  
 |||

Db 3101 -----CTGGATTAAAGATTAAAGCCTTAATCTGTTTAGATTATC-----  
 TTT 3142

Qy 5823  
 AAAACAAGACATCTCCAGGTAGGAAAAAATGAAAGCTATTTTCATGCAAACATTATCTAA 5882  
 | ||||| ||||| || ||  
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Db 3143 A-----ATCTCC-----ATGAAA-----TCGTG-----  
 AA 3162

Qy 5883  
 TTTAGCTTAAAAGTGAAAGTGGTAATACTGTTGGTTTCTGTAAATGTTGCAGGGTTTTAA 5942  
 || | ||| | |||| | |||| ||  
 Db 3163 ATAAG---ACAAG-  
 AATAGTGTTCAGCTGTAGG----- 3192

Qy 5943  
 ACTTTATAATTACTTTAATATTTTTGATAACTAGAAATCTAGTATTGCCATAAAGGAAAC 6002  
 | || |||| |  
 |

Db 3193 CCATT----TTAC-----  
 AGC 3204

Qy 6003  
 TAAGTGCCCATCAAAGATTTGTTTGGTATAAATAAAGAATTATTTGTTTTGTTTTCAATG 6062  
 ||| ||||| || |||| || ||| ||| || ||  
 Db 3205 TAATTGCCCATAAA---TTGT-----AGCATTATTGACCTG-----  
 AAGT 3242

Qy 6063 ACAGTAAGCTACAAATCATGA-  
 TGCTTAAAACTTTCTAAAGATGAATTGTGTGGCAGTG 6121  
 || ||||| || ||| | |||| | | ||||| || ||  
 Db 3243 AC--TAAGCTAATTGTCTTGACTACTCAAAGCC---C-----CTGAATTGT-  
 TGTCA--- 3288

Qy 6122  
 ATTGGTCTGTTTGTGGAGAATGTATGAAAGCTATTAATATTCTAGAATAGATTAATAAAT 6181  
 | | | ||||| ||| | ||| | |  
 |

Db 3289 ACTTTCCCTTTGTG----TTGTGT---AGCCCTAA-----  
 CGTCATT 3324

Qy 6182  
 TGGCTATGTTGTTCCAATGAATGTACAGCACTTCCATTAACTTTTGAAAGCAACACAGCC 6241  
 | ||| ||||| || ||| | |||| || ||||  
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Qy 1115  
 CGTTGCCTCAGAGACAGTGGCCACGGGCGAGGGGCTGCGGCAGACCATCATCGGGCAGCC 1174  
 | | | | | | | | | | | | | | | | | |  
 Db 3251 --TAGCTT-----AGTACTTCA--  
 GGTCAATA 3229

Qy 1175  
 CATGTCCGTCAACATCACCACCAAGGACAAAGACGGTGAGCTGTGCAAAACCGGCAACGC 1234  
 | | | | | | | | | | | | | | | | | |  
 | |  
 Db 3228 AATG--CTACAATTT-----ATGGGCAA-----TTAGCTGTAAAATG-----  
 GC 3192

Qy 1235  
 CTACCTACCGCCGAAGTGTGAGCAGCCCCGACGGGAGCGTGGCAGACGGGGAGATCCTGGA 1294  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 3191 CTAC-----AGCTGA--AACACT-----  
 ATTCTTGT 3168

Qy 1295  
 CAACAAGAACGGCACCTATGAGTTTTTGTACACTGTCCAGAAGGAAGGGGACTTTACCCT 1354  
 | | | | | | | | | | | | | | | | | |  
 Db 3167 C-----TTATTTACGATTTC-----  
 ATGGAGATTAAA---- 3140

Qy 1355  
 GTCTCTGAGACTCTATGACCAGCACATCCGAGGCAGCCCGTTTAAGCTGAAAGTGATCCG 1414  
 | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 3139 -----GATAATCTA-----AACAGATTAAAGGCC--TTAATCT----  
 TTAATCC- 3103

Qy 1415  
 ATCCGCTGATGTGTCTCCCACCACAGAAGGCGTGAAGAGGCGCGTTAAGTCCCCGGGGAG 1474  
 | | | | | | | | | | | | | | | | | |  
 Db 3102 -----AGGTGAGTA-----  
 ATTTTGT----- 3086

Qy 1475 CGGCCACGTCAAGCAGAAAGC-  
 TGTGAAAAGACCCGCAAGCATGTACAGCACTGGAAAAC 1533  
 | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 3085 -----TGTAGTAAAAAGCATAAGAAATAATTCTC-  
 AGCATATTATGTAAAAGAAAA 3035

Qy 1534  
 GAAAAGAGAATCCCATCGAAGACGATTTGATCTTTTCGAGTGGGTACCAAAGGAAGAAATA 1593  
 | | | | | | | | | | | | | | | | | |  
 Db 3034 G--CAGTGAACCTT-----GTTTGGTCTTCC-  
 AGTGG-----C 3003

Qy 1594  
 AAGGAGAGTTTACAAATCTTCAGGGGGTAGCTGCATCTACAAATGAAAGATATTAATTG 1653  
 | | | | | | | | | | | | | | | | | |  
 Db 3002 AAGGATAGTTGA-ACAACTTCA---AGAAGCT-----  
 GAGAGAAGTT----- 2965

Qy 1654  
 CAGACAGTAACAACCAATGTGTGCAGATATTTTCCAATGATGGCCAGTTCAAAGTCGTT 1713

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Db          2964 -----TGTTT-----CCAATTTACAAGT-
ATT 2944

Qy          1714
TTGGCATAACGGGACGCTCTCCGGGGCAGCTGCAGCGGCCACAGGAGTGGCTGTACATC 1773
      ||| |||| | |           | |   ||| |           | || |
|
Db          2943 TTGACATATAGATA-----AACAAAAGCAAAAC-----
CAGTTAAAC 2907

Qy          1774
CCAGTGGGGACATAATCATTGCCGATTATGATAATAAATGGGTCAGCATTTTTCTCTCCG 1833
      |         | |   |||| | | | | | | | | | | | | | | | | | | | |
|||
Db          2906 CTT-----AAAAGATCAT--CTGAATAAGATCTGAC--AATTATAATTTT-
ACATCC- 2859

Qy          1834
ATGGGAAATTTAAGACAAAAATTGGATCAGGAAAGCTGATGGGACCCAAAGGAGTTTCTG 1893
      ||| ||| | | | | | | | | | | | | | | | | | | |
Db          2858 ATGTGAATTTCAAG----CAATT-----
GTTAATGGGGACCA----- 2826

Qy          1894 TGGACCGCAATGGGC-
ACATTATTGTTGTGGACAACAAGGCGTGCTGCGTGTATCTTC 1952
      ||| |||| | |||| | | | | |
|||
Db          2825 -----GCA--GGGCTGCATTA-----AGAAAACCA-----
CTTT 2799

Qy          1953
CAGCCAAACGGGAAAAATAGTCACCAGGTTTGGTAGCCGAGGAAATGGGGACAGGCAGTTT 2012
      | | |           | | |
Db          2798 TCACTGATC-----
TCTCCC----- 2784

Qy          2013
GCAGGTCCTCCATTTTGACGCTGTAAATAGCAATAATGAGATTATTATTACAGATTTCCAT 2072
      || ||| || | | | | | | | | | | | | | | | |
||
Db          2783 -----CCACATATT-----TTTAATTTGTCTTGCTTTGTTTATTTT---
GGTTATGCAA 2738

Qy          2073
AATCATTCTGTCAAGGTGTTTAATCAGGAAGGAGAATTCATGTTGAAGTTTGGCTCAAAT 2132
      | |||| |           ||| |||           || ||           || |||||
Db          2737 GTCCTTTCTCT-----TCATGAA-----ACAAGT----
GTAAGGCTC---- 2705

Qy          2133
GGAGAAGGAAATGGGCAGTTTAATGCTCCAACAGGTGTAGCAGTGGATTCAAATGGAAAC 2192
      ||| ||| ||           || |||           ||
Db          2704 -----TAAGGCTAAAA-----
TAATAGTTATTT----- 2682

Qy          2193
ATCATTGTGGCCGACTGGGGAAACAGCAGGATCCAGGTTTTTGATGGGAGTGGATCATTT 2252
      ||||| | | | | | | | | | | | | | | | |

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Db 2681 ----TTGTGGGCCCC-----AAATAGC----TAC----TTTTGA-----  
ATTT 2651

Qy 2253 TTGTCCTACAT---  
TAACACATCTGCTGACCCACTCTATGGCCCCCAAGGCCTGGCCCTA 2309  
| | | | | | | | | | | | | | | | | | | | | |

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Db 2650 CTTTCTTTAGTATATCTCAAATCTGGGGAAC-----ATGGAACCTGAAGACT---  
CCTA 2600

Qy 2310 ACTTCAGATGGTCATGTTG----TGGTTGCAGACTCTGGAAATCACTGTTTCAAAG-  
TCT 2364  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 2599 AC-----CATGAAGCATTGGAATAAC-ATATCATTCACT-  
TTTCACAGAACC 2552

Qy 2365 ATCGATACTTACAGTAATGGTGGGCAGGTGGATA-CCCGCTTC-  
CATGGTCTTGCACTAT 2422  
| | | | | | | | | | | | | | | | | | | | | |

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Db 2551 AT--TTTCTTAAA--AATAAGAGGCA-----ATATCCAGATTACATG--CATGTTC-  
AT 2504

Qy 2423  
AAACTGGAATGGATTTCTCAATGCGGGACCAGATTATGACTAGAGTTTTTATGCCAGAAG 2482  
| | | | | | | | | | | | | | | | | | | | | |

Db 2503 AATAAAGCTTTGTTTT---AAACAAATCCA-----CACCAGCATTATTTT--  
CAGCTT 2455

Qy 2483  
GAATCATTGGTGAACTTTCCAAGGTTATTTCTGAATGTAACAATTTCTTAAAAATGACT 2542  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 2454 AATATTTTGGC-CCCAACCCAAG---AATTCAG-GTATAACATTT-----  
AAT 2412

Qy 2543 TATCCAATTTCTGTATTTTACCTTTAGG--  
GTTAAAAAACTCTTCTACTGAATCTATA 2600  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 2411 TTTC---  
ATCTGTAATGCATATATTGGAAGGACAAAATATATATGCAAATAACACTGGA 2356

Qy 2601 AAAACTGCAGTTT--TACATCTGTGAAC----  
TATGGCTTAAGGGACAGGATTTATGTAG 2654  
| | | | | | | | | | | | | | | | | | | | | |

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Db 2355 AAA--  
TGTTGTTTCTATACAAGTGATCAAGAAAAAACAAGAAAAAGAAAACCCATAG 2298

Qy 2655 CTAAACTAATTTTGC--  
AAATCAAACAGACACTTAAAAAACTAGCATATGTAAAGGTAT 2712  
| | | | | | | | | | | | | | | | | | | | | |

||  
Db 2297 C---ACTAAGTTTGCTGTAGTGAAAATATGGTTAACGGTGCCGTGCAAAATTAG----  
AT 2245

Qy 2713 TCGTTAATCCTGTGAATGGTAG--

CTTTTGCACAGAACTTCCAAAAGCAAACAAAACA 2770  
 ||  
 ||  
 Db 2244 TTGT-----TGAAAAGTAGTTCTATTACAGGGAG----CAAAGCAA---  
 AGAAGCA 2200

Qy 2771  
 AAATCTATTGTAGTTATATACTTCATTTAACCTAGGTCACAAGACCCAGGGAATCTTCTA 2830  
 |  
 Db 2199 AG----TTTGTGG-----GCAAC-----TCGGAAG----  
 AGGGGATCATAT- 2167

Qy 2831 ACCTCACTTTTACAGTAGGTATTACTCTTGTGACATTTTTTTGGTTATCA-  
 ACAACTAAA 2889  
 || | || |  
 ||  
 Db 2166 ---TCTCATTTCC-----TTA--ATTGTAA-----  
 TTTAAATAATCATTCTCCATAA 2125

Qy 2890  
 TATAAATTACTTTGGAAAAAGTAAGGCTGTCTTGCAAAATGATCCCAGCTCTGATTAGCA 2949  
 | | || |  
 Db 2124 TTTCTCTTTC-----TAGAGCTTTCTT-----  
 CTTTGTAT---- 2095

Qy 2950 GCCCTCTGGAGTTCAGAACTTAAGTATCAGTGCAAATTTCTCAACCTTTCTG---  
 GGTTA 3006  
 || ||  
 |  
 Db 2094 GCTATC-----ACGTAAGGT--AGTAC-TATTTCT---  
 ACCTTAAAAAATGGAAA 2052

Qy 3007  
 GACAAAGATCCTTTTTTGTGTGTTCTTTTCACCACCCCTTTGGCTCACCTTGTATCAGCA 3066  
 ||||| || | | || | ||||  
 |  
 Db 2051 GACAAATTTTCAGCCTAAGAATGATGTATTCTGAG-----TTGGC-----  
 AATTACTTAA 2003

Qy 3067 AACAAAGTACTTCTTCAGGGAAACCTGAAATTTCTAATGCCTTGAAAAGCATATTAC-  
 AA 3125  
 ||||| | || ||  
 |  
 Db 2002 AACAAATG-----AGAGAG-----  
 TAAACACATCAAACCTTA 1972

Qy 3126 AAGTAATGCTACCTTTTGGGAAACAAACTGCC---  
 CCGTTAACTCCAGATCATTGCACTG 3182  
 |||| | ||| |||| | ||| |  
 Db 1971 AAGTGTT--  
 TACTTTTTGAACATTAAATAAATGTCAGGTAAATACAGAAAAAT----- 1920

Qy 3183 GAATGTAATCAAGAAAGTTAGTCATGTTTTATGTACCATGTTTTACAC-----  
 GTGTCT 3237  
 || |||||  
 |||  
 Db 1919 --ATATAATCA-----CTAGTTCTCAG---  
 CATTTTATCAATCCCTTTGTTTCT 1876



Qy 3238 CTTCTCTTCGAC-TTCCTGAAAGCGAAAGCTTTACCTCC-  
TGCAAATGTCAGCACATGTA 3295  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1875 CTTCTTCTAGAAGATTCTATGAGCATT--TGTTGCTCCGATCAAAAGTAACCTCAC-  
TA 1819

Qy 3296 GTAGGACACCAGTATCCTAG-  
GACAGAGAGCCATAAGTAGCCCTTTGGAGGACTGATGGT 3354  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1818 CTCAAATACC---ATCATAGCTTCAATGTGCATTA-----  
TAGTGAT 1780

Qy 3355  
GTCAACCAAAGGCATGTGATTGATTAATGATTCCCCCTTAGAAAGCAAGTGTTACCAAAG 3414  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1779 TTCA-----GT-----AGATTCACACT-----  
CAAATCTTTTCA--- 1751

Qy 3415  
TTGTGTTATCTTGAAAGCATTACAGGTAAGGGCATGTTATGGTTATTTATCATTGTTTAA 3474  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1750 --GTGTCAT-----ACATTT---ATTAAGCCA---TAAAGTTATGAAACC----  
CTCA 1710

Qy 3475  
TGAATAGTAGAGGTGTCAAGGGACTATGTATACATGATTAGGGTAAGATAGAATGTATTA 3534  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1709 GCTCTTGTGGAGAGATCTGGGCAGAATTTATACAAGA-----AGAA-  
GTTTAA 1663

Qy 3535  
TATATATATATATATATACACACACACATATATATAGCTGAATCTTTGGTGTATTGAAAT 3594  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1662 TTTAT-----CACTTAAAAAT-----  
CATCT----- 1642

Qy 3595  
AGGCAGCACTCTGAAAGACAGAAGCTTCGTCCAGCCACTCTTCAGCACATTCTTTACTA 3654  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1641 ---CATAATTGTGGTA-ACAGA---TTTTTAAAGTAAC-----  
CCTTTGGAA 1602

Qy 3655  
AGCAGTTTAAAGCCGTCCTAGTGGAGCAAGCCCTAAAGCAGATTTAATTTTTGCCATTTT 3714  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1601 AAAATTTTA---CGTGATA-----CCCAAAGGCA-----  
CTAGTT 1570

Qy 3715  
CCAAGAATGACGGTGGTGGCTTTTAGTCAGAAAATGGCCTTCTGTGCTTTCAAAAAAAAA 3774  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 1569 CACATAAGG--GGT-GTGGCT-----GAAAAAG-----  
CAAACAAAG 1535

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Qy          3775
ACAAAAAAAAAACCCACACACACACATAAAAAACCCAACAGGTCAAAATAAAAGTTGAACT 3834
      ||      ||      |      |||||      |||      |      |||||      |
||
Db          1534 CCATTGTGTAAGTAAAGAGCACACAAAAA-----AGG--
ATATTAAAAGGAAACCT 1485

Qy          3835 TGAGTTA--
CATTTAATTTAAATATAAAATGCATTTTGAGAAATGTTAAGAACAATTTAGT 3892
      |||      |      ||      ||      ||      ||      |      |||||      ||      |||
|
Db          1484 ---GTTAAGCTTTAAAGTTA-----TTCTAAAAATG-----
GCACTTT--T 1449

Qy          3893 CAATCGTTCATCTGTCAT--TGGTACTGTAAAATAAGCTGT---
GGTCTATTTCCACTGT 3947
      ||      ||||      |      |      ||      ||      ||      ||      |      |      |      ||      |||      |
|
Db          1448 CA--
CGTTGGTATAAAATGAAAGTGCTTTAAGATGAAATTTTTATGTATTTTTTTTAAAGC 1391

Qy          3948
TTAATTTTCTACTCAGTTCTACCAAATAGGATGTCATGTTTGACATTTTTTGATAGTGACT 4007
      |      ||||      |      |      ||      |||||      ||      |      ||||      ||
Db          1390 TGATTTTTTAACCCC-----CTG-AAAATAGGGGGT----TATAACA-----
AG----- 1353

Qy          4008
TTGGGGTCTTCTTCACTGAAAGCACCTTAGAAGTGTACTATAAGAAAACATTTCCCCTAT 4067
      |||||      ||      ||      ||||      |||      |      |
||
Db          1352 -----AACACTGATAGACTCT---AACT-----
CATAGCGGCAAT 1321

Qy          4068
GTATAATTATATGAATGTGATGTTTATTGCTTATTAATTTATAAATTCAGTCATTCTCTAT 4127
      |      ||      ||      |      |      ||      |
|
Db          1320 -----AAGTAGTGGATGTCACTAA-----
AATGCTCTGT 1292

Qy          4128
ATAGGACTTCTTAAAAATTTAGAAGGGAAATCTAGCTACTTCAAATTGTCTGTAAATTTA 4187
      |      |      ||      |||      |||||      |      ||      |      |||      ||      ||
||
Db          1291 GTGTGTCT--TTATTTTTTTAGTA-----TTTTTAATGT-
TGATAGACTTG 1250

Qy          4188 TTATGCCCAAATCAACCTCTGAAAAAAGGTTTTTTCC--
AGGAAGATTACATTAGGTTT 4245
      |      |      |||      ||      ||      ||      ||      |||||      |      |||
Db          1249 CTTT-----ATCTATCT-----
GTGTATCATTAGTGAGATTGCTTTTC----- 1211

Qy          4246 AATATTTTTTTTAGTTAGGTAGAGTT--
TTAAAAAATACTTGAGCCTGTCCGTGATAAAGC 4303
      |||      ||      |||      ||      ||      ||      |      ||      ||      |      |
|||||
Db          1210 AATTCCTTTACTAGAAAAGTTACAGCTCATTAAAAATAGCTGGTAAAT-ACAG----

```

AAAGC 1156

Qy 4304 TATAAAATTCAATAACTTTTTAGAAATGTTAAATGAAGACACTGTT--  
TCCTAACATCAGT 4361

Db 1155 ATAAATATACAGTAAGTTT-----  
AAACACTGATTGTACTAA----- 1119

Qy 4362  
GAGATACATCTTTGAATTTAAACATTTCATATTTACTGAGTACCTACTAGGTACCA----A 4417

Db 1118 ---ATGCAAC----AATACAAAGAAGCAAAT-----  
GGAACACAAATGGTAACACAATA 1072

Qy 4418 GTACTCTTTTAGGCACTGGAAATACAGTGATGGACAAAACA-  
GGTAAAAATCGCTGCC 4476

Db 1071 AAAGTGTATTA--CATTTGTGCTTCAAATAT-  
TACAATACATTATATACAATAG----- 1021

Qy 4477  
CCTCAGAGCTGACATTCTGGGGTGGGAATTTTCATTTTGCCACGTACTAACGTTCTGCACA 4536

Db 1020 --TCCAAAATAAACATC-----TCA---TGCCAAG---TGAC-----  
ACAAA 987

Qy 4537  
AAAGACAGGCTAGACTCTTGTCTAGATTGTTTAAAGAACTTTTCAAATTGGTTACATT 4596

Db 986 AACGAATAGCAAGC-----AAAAAATCCAGCCATAT---  
GTACATT 948

Qy 4597  
AATTTTAGTTTATTTTACAAAGTAAAAATGGCTTTTTATTTAGATTCTTTCTGTCCCAGG 4656

Db 947 ACTT-----TTTTC-----  
TTTAATAATAAACATTC----- 922

Qy 4657  
CTGTTGATCTTAAACTAGTTGATTTAAAGAGTTTTTTTTGCACAACATTTCAATTATATT 4716

Db 921 -----AACTCTGAACCTGG-----GGCAATTT---CACTACA-  
TACAG----- 889

Qy 4717  
TGTGAACCTAGAAATTAACCTACAATCTAACCAGCCATCATATCATATCCTATCAGGCTA 4776

Db 888 -ATGCAGTCCGCCTTTTA--TTCCATATAACCATCCTGCCT-----TCCTATAT--  
CTA 840

Qy 4777 -  
GATATCTCAATAGTAGACTGAATACAAAGCTAATTTTTTTTTACATGTCAATATTGGCAC 4835

Db 839 CGCTAT-TCAGTAGGTTCTGTGT-----CAATTCTTATGTACATG-----  
TGGAGC 794

```

Qy          4836
AAACTGGAATGAAAAGAATAGTTTGATTTCAGACCTGCTCCACTATGTGTTGCTAAACACA 4895
      |||  | || ||||| |  | ||||  ||| || || |
Db          793 AAAAAAG-ATAAAAGAAT-----GTAGTGCTC-----TGTATT-
CTTA----- 758

Qy          4896
TGCTATGAGCACTCGAGGAAACACTATATTTTTTCCAAAAAATATGTGATTATATATGTT 4955
      ||| |  |||
|||||
Db          757 ----ATGGG-----GTG-----
ATGTT 745

Qy          4956
AAAGTATAGATAACATTTACACTTGGATACATATGTGCATTTACTGTATTTCTTGGTAA 5015
      ||||| |  | || |||  |||||  || | |||| |
|||
Db          744 G----ATAGATCA---GCGAACCTGGG-----GTGCATAACCT-TCTTTCAT--
TAA 703

Qy          5016
GCATATTTTTTGGGGGAAAAGTGCTGCTGATATGATACAAGTAGACAAAATTTAAATGAAAT 5075
      |  ||  | |  | || |||  | | |  ||||  |  || |
|||
Db          702 AC--CTTCCTCGTAGTCCGT-CTG--GCAAAGGATCATGT----
TATTCTTTAGGAAAAA 652

Qy          5076 TTTGTCACATTCTATGGAAAATGGTTTCTGGT----
AAACTGAGAAGGATATTAAAATAA 5131
      ||||| |  |  | |  | |||| |  || |||| | | | | |
|
Db          651 TTTGTCTCCAAC-----
ACAAAATCTCTGATTACAAAGCTGACATGCAAAGCAGTCCAG 598

Qy          5132 GTGG----
CTTTTTTCTGGGCTACCATTATTGTTTGATTCTCTTTGTCAAGTGTATAGA 5187
      ||||  | || | || |||  ||| |  ||||  | || | |
||
Db          597 GTGGTAAACATTGTCCTTGGCACGCATCA-----CCATCTCAAAGGCAGGGAT---
GA 548

Qy          5188
ACCTGTCATACATTTCATGATAAGTAGCACTGAAAAATTACTCATTCAAATTTCCCCTG-- 5245
      |  | |||| || | ||| | |  |||| |  ||||  || | |
Db          547 GCT--TACTACAGGCA-GCGCAGTTTCCC-----GTTACAC---
CAAAGAGCCTCAGAT 500

Qy          5246 -GGCACGTAAGGCAAAATATTGCCGGTTGGGATTTCAAGGTCAGTGACGA-
CGCATTTCC 5303
      | | | | | |||| ||  | | | |||  | ||| | || | ||
|||
Db          499 AGTCTC-TGCGACAAAGGAT---
AAGATTAGCTTTAGTGACAGGGTGGAGCCCACCTCC 444

Qy          5304 TCCCAGT-
ACAGACCCCCCAGCCCCCCTTGCTGGACATGGGGAGGCAGAGAGTCACTTGA 5362
      || || |||| | | ||| | | |||  |  |||||  |||
Db          443 CCAAGCGACAGTCACAGCAGGCACACTT-----C-----AGGCAG-----
TCTT-- 404

```

Qy 5363  
CCATCCAGAAATACATGACTACAAGTCCTTTATGACTGTTTGCCATTTTTTTTAATGGTA 5422  
| | | | | | | | | | | | | | | | | |  
|||  
Db 403 CATGCCAGTATT---TGTC--CAGTGCCTTTAGAA---GATACC-----  
GGTC 364

Qy 5423 CTTAGTATTTTGATCAAACCTTTAGTCTCCAGAACTAAACAAGTC-  
CCTAAGTTTCCTTAT 5481  
| | | | | | | | | | | | | | | | | |  
Db 363 C-----TTGATCTTTTCGGTTGCAGCCAGCAC--  
AACCTTTCGGCTTGGTGTC----- 319

Qy 5482  
TTTAATTTACTGTGACTAGATTTGAAGCAAATAAATACTCCAGATCCATGCAGCTAGAAC 5541  
| | | | | | | | | | | | | | | | | |  
Db 318 -----TGGCTGGACTGAGAGCATTTGTATA--  
CCAAAACCTTT----- 284

Qy 5542  
ACACTTGCTTCCACTACTAAATATACAGGGTATGTCCTAACATGGAGTAACTGGAATAG 5601  
| | | | | | | | | | | | | | | | | |  
|  
Db 283 -----TCTCCTTTTTCTGCATGAGTTGACTTA----GGCG-TGTCT-  
GAGTTG 242

Qy 5602  
CAGTACACTAGCAAGTATCTGTGAATCCTTAGCACTGACGGGTAAACAGAAATGCTTTGG 5661  
| | | | | | | | | | | | | | | | | |  
||  
Db 241 CAGCAGCTTCGCAT-----TGAGCACCAAACCCAAAGGTAGAAGTAGAAGGG----  
GG 193

Qy 5662  
TAATACCTACTTAGTTAATTGGAGGAAGTAGTAAATAAACATTAGGTAATCTGCAGATTA 5721  
| | | | | | | | | | | | | | | | | |  
||  
Db 192 T-----CTCCTTGAT---TTCGCTTAAGT-----GTGGACCT--GGTGC---  
GCAGCCTA 151

Qy 5722  
CTTCAAATGGGAAAAATCTTTTTGTAGACTCTATAGTACCCTCTCTATTCACTAGCTTCT 5781  
| | | | | | | | | | | | | | | | | |  
|  
Db 150 CACCGCCGAGGACCGACTATTGTGAAGCCACTTTGGGAGCGGGTCGG---  
AGTGCGGCA 94

Qy 5782  
GAAAAGGGAGGAGTATTTTTAGTTTGACAATTTAATAATTTAAAAACAAGACATCTCCAG 5841  
| | | | | | | | | | | | | | | | | |  
Db 93 GGGGGTGGGGGAAGGGATGAGGACGGCC-----  
AGACAAGAC----- 57

Qy 5842  
GTAGGAAAAAATGAAAGCTATTTTCATGCAAACATTATCTAATTTAGCTTAAAAGTGAAAG 5901  
| | | | | | | | | | | | | | | | | |  
|  
Db 56 --AGG-----GCGCACACACGGAGCCC--CTCGCAGTGTGC---  
AAAATGATGG 15

Qy 5902 TGGTAATACTGTTGG 5916  
| | | | |  
Db 14 CG--AATCCAGTAGG 2

RESULT 3

US-10-478-914-4  
; Sequence 4, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 4  
; LENGTH: 3210  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-4

Query Match 20.8%; Score 7966.5; DB 1; Length 3210;  
Best Local Similarity 38.3%; Pred. No. 0;  
Matches 2028; Conservative 0; Mismatches 1136; Indels 2131;  
Gaps 280;

Qy 1 CCCAGTTGTCTGCGGGCTGCGGGGAGCTAAGTCCCCAGATTGGAGGAGGCTG--  
GCTCTG 58  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2 CACTGTTGGC-----CTACTGG-----  
CCCAGGCCTTGACACGCAGGTGCTC-- 44

Qy 59  
GTCTTCGATGCACAGGAGTGGCCGTTATGGAACGCAGCAGCAGCGTGCAGGGTCAAAGAC 118  
| | | | | | | | | | | | | | | | | | | | | |  
Db 45 -TCTTAG-TGCTC---CCTGGCAAGGATGGGAAG-----  
GCATGTTTCAGTCCTAGG- 90

Qy 119  
AGCCGGCCCCCATGTTCAGTGGTCTAGGATGGCCAGTGAAGGCACCAACATCCCAAGTCC 178  
| | | | | | | | | | | | | | | | | | | | | |  
Db 91 AGTAGG----AAGGGGCAGAGGTGT-----  
TGATGGCCCCTACA----- 125

Qy 179 TGTGGTGC-GCCAGATTGACAAGCAGTTTCTGAT--  
TTGCAGTATATGCCTGGAACGGTA 235  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 126 ----GAGCGGCAAG--GACAAGGAGCTGCTGTTTCGAAACAGCCTT--  
CCTGCTCCCAA 177

Qy 236 CAAGAATCCCAAGGTTCTCCCCTG--TCTGCACACTTTCTGC----  
GAGAGGTGCCTGCA 289  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 178 CCTGCCTCCCA-----  
CCCAACAGGTTTTGCATATACTCTACTGGGAAGAGGGACACACC 232

Qy 290  
GAACTACATTCTGCCCACAGTTTAACCTCTCCTGCCCAGTGTGCCGCCAGACCTCCA- 348  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 233 CGACTGCATCACTGCCCTCCAAGT--CTCTC-CCTGCCCTGT-----CCAG-  
CATCCAG 282

Qy 349 -  
TCCTGCCCCGAGAAAGGGTGGCCGCGCTCCAGAACAATTTCTTCATCACAAACCTGATG 407  
| | | | | | | | | | | | | | | | | | | | | |  
Db 283 GAGCACCCCTAG-TTGGGGAAGC-----TTCTGTGACTC---  
CC----- 317

Qy 408 GACGTGCTGCAGCGAACTCCAGGCAGCAACGCTGAGGAGTCTTCCATC-----  
CTGGAGA 462  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 318 --CCTACAACAGC-----CTAGGATGGA-----  
GTGGGGTTTGTGAACAAATGCAGAAGG 365

Qy 463  
CAGTCACTGCTGTGGCTGCGGGAAAGCCTCTCTCTTGGCCAAACCACGATGGGAATGT-G 521  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 366 CAGT-----CTTAGGGAGGTCAGCTGACATGCCCCT-----  
GGCCTGTGG 405

Qy 522  
ATGGAATTTTACTGCCAGTCCTGTGAGACTGCCATGTGTGCGGGAGTGCACGGAGGGGGAG 581  
| | | | | | | | | | | | | | | | | | | | | |  
Db 406 CTGGGAAGTAGCAG--AGG-  
CTAAGGTTCTTCCCCGCTCTGGGGTTGCCAGGAGTAG--- 459

Qy 582  
CACGCAGAGCACCCACAGTTCCACTCAAGGATGTGGTGGAACAGCACAAAGGCCTCGCTC 641  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 460 -----CACTGGATCAGTCA-----GGTGACAGGGCTCT---  
CCTCTCTC 495

Qy 642 ----  
CAGGTCCAGCTGGATGCTGTCAACAAAAGGCTCCCAGAAATAGATTCTGCTCTTCA 697  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 496 TGAGCAGGTCCGG-TGGCAGCCTTC----AAGGTCGCCACG-----  
CC 533

Qy 698  
GTTTCATCTCTGAAATCATTCATCAGTTAACCAACCAAAAGGCCAGCATCGTGGATGACAT 757  
| | | | | | | | | | | | | | | | | | | | | |  
Db 534 G-TATTCCCTG-----TATGTCTGT-----CCCGAGGGGCAG-  
AACGT----- 569

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Qy          758
TCATTCCACCTTTGATGAGCTCCAGAAGACTTTAAATGTGCGCAAGAGTGTGCTGCTTAT 817
      |||| |      | || | || | |
|
Db          570 -----CACCT-----CACCTGCAGGCTCT-----TGGGC--
CCTGT 599

Qy          818
GGAATTGGAGGTCAACTATGGCCTCAAACACAAAGTCCTCCAGTCGCAGCTGGATACTCT 877
      |||      | | | | | || | || | | | | || | | | | || |
|
Db          600 GGACAAAGGGCACGA-TGTGACCT-----TCTACAAGACG----
TGGTACCGCA 643

Qy          878
GCTCCAGGGGCAGGAGAGCATTAAAGAGCTGCAGCAACTTCACAGCGCAGGCCCTCAACCA 937
      |||| |||| | | | | || | || | || | || | || | || |
||
Db          644 GCTCGAGGGGC-GAGGTGC----AGACCTGC-----TCAGAGCGCCGGCC--
CATCC- 688

Qy          938
TGGCACGGAGACCGAGGTCTTACTGGTGAAGAAGCAGATGAGCGAGAAGCTGAACGAGCT 997
      |||      |||      || | || | || | || | || | || |
Db          689 --GCA-----ACC-----TC----- |||
ACGT--- 700

Qy          998
GGCCGACCAGGACTTCCCCTTGCACCCGCGGGAGAACGACCAGCTGGATTTTCATCGTGGA 1057
      |||| | | | |||| |
||||
Db          701 -----TCCAGGACCTTCACCTGCAC-----
CATGGA 726

Qy          1058
AACCGAGGGGCTGAAGAAGTCCATCCACAACCTCGGGACGATCTTAACCACCAACGCCGT 1117
      ||      |||| | || | || | || | || | || |
Db          727 GGCCACCAGGCTG-----CCAACACCAGCCACG-----
ACC----- 757

Qy          1118
TGCCTCAGAGACAGTGGCCACGGGCGAGGGGCTGCGGCAGACCATCATCGGGCAGCCCAT 1177
      || |||| | || || || | | | | | || || || || || |
Db          758 TGGCTCAGC-----GCCACGGGCTGGAGTCGGCTCCGACCACCAT--
GGCAACT--- 805

Qy          1178
GTCCGTCACCATCACCACCAAGGACAAAGACGGTGAGCTGTGCAAAACCGGCAACGCCTA 1237
      || |||| || | || | || | || | || | || |
|
Db          806 -----TCTCCATCACCA-----
TGCGCAACCTG-----A 829

Qy          1238
CCTCACCGCCGAAGTGGAGACCCCCGACGGGAGCGTGGCAGACGGGGAGATCCTGGACAA 1297
      ||      | || | | || | || | || | || | || | || |
Db          830 CC---CTGCTGGAT--AGCGCCTCTACTGCTGCCTGGTGGT---
GGAGATC----- 873

Qy          1298 CAAGAACGGCACCTATGAGTTTTTGTACACTGTCCAGAAGGAAGGGGACTT--

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TACCCTG 1355  
 ||||| | | | | | | | |  
 ||  
 Db 874 -----AGGCACC-----ACCACT---  
 CGGAGCACAGGGTCCATGGTGCCATG 912

Qy 1356  
 TCTCTGAGACTCTATGACCAGCACATCCGAGGCAGCCCGTTTAAGCTGAAAGTGATCCGA 1415  
 || | | | | | | | | | |  
 Db 913 GAGCTG-----CAGGTGCAGACAGGCAAAGATGCA-----  
 CCAT 946

Qy 1416 TCCGC--  
 TGATGTGTCTCCCACCACAGAAGGCGTGAAGAGGCGCGTTAAGTCCCCGGGGA 1473  
 | | | | | | | | | |  
 ||  
 Db 947 CCAACTGTGTGGTGTACCCATCCTCC-----  
 TCCCAGGAGA 982

Qy 1474  
 GCGGCCACGTCAAGCAGAAAGCTGTGAAAAGACCCGCAAGCATGTACAGCACTGGAAAAC 1533  
 | | | | | | | | | |  
 Db 983 G-----TGAAAGT-----AAGGGACCAAC-----  
 CTCTTG----- 1007

Qy 1534  
 GAAAAGAGAATCCCATCGAAGACGATTTGATCTTTTCGAGTGGGTACCAAAGGAAGAAATA 1593  
 || | | | | | | | | | |  
 Db 1008 -----CCC-----CTTT-----  
 TGGGTTCTC----- 1023

Qy 1594  
 AAGGAGAGTTTACAAATCTTCAGGGGGTAGCTGCATCTACAAATGGAAAGATATTAATTG 1653  
 || | | | | | | | | | |  
 ||  
 Db 1024 -----TGTTT-----TCTTCTG-----TCCTCATC-----  
 CTG 1046

Qy 1654  
 CAGACAGTAACAACCAATGTGTGCAGATATTTTCCAATGATGGCCAGTTCAAAGTCGTT 1713  
 || || | | | | | | | | | |  
 |  
 Db 1047 CACCCAG-----ACC-CTGTTTGGAAC-----CTGGCC-----  
 TCAT- 1078

Qy 1714  
 TTGGCATAACGGGACGCTCTCCGGGGCAGCTGCAGCGGCCACAGGAGTGGCTGTACATC 1773  
 | | | | | | | | | |  
 |  
 Db 1079 -----CACCCC-----AAGCCCTCAG-----  
 AAC 1097

Qy 1774  
 CCAGTGGGGACATAATCATTGCCGATTATGATAATAAATGGGTCAGCATTTTCTCCTCCG 1833  
 || | | | | | | | | | |  
 |||||  
 Db 1098 CCC-----CC-----GGTC-----  
 CTCCTCC- 1113

Qy 1834

ATGGGAAATTTAAGACAAAAATTGGATCAGGAAAGCTGATGGGACCCAAAGGAGTTTCTG 1893

|||||

Db 1114 -----  
TTTTCTG 1120

Qy 1894

TGGACCGCAATGGGCACATTATTGTTGTGGACAACAAGGCGTGCTGCGTGTTTATCTTCC 1953  
| | | | |

||||

Db 1121 ----CTGCT----GCACAT-----C----CCTTCTG-----  
CTTC- 1143

Qy 1954

AGCCAAACGGGAAAATAGTCACCAGGTTTGGTAGCCGAGGAAATGGGGACAGGCAGTTTG 2013  
| | | |

||

Db 1144 -----CTCC----TTGG-----  
TG 1153

Qy 2014

CAGGTCCCCATTTTGCAGCTGTAAATAGCAATAATGAGATTATTATTACAGATTTCCATA 2073  
| | | | | | | |

Db 1154 CA-ATCCCCA---GAAGC-----  
CCACT 1172

Qy 2074

ATCATTCTGTCAAGGTGTTTAATCAGGAAGGAGAATTCATGTTGAAGTTTGGCTCAAATG 2133  
| | | | | | | |

|

Db 1173 CTCCTTCCATC-----TGCTCTGGAG-----TC-----  
TCTGCTCCTCTT 1207

Qy 2134

GAGAAGGAAATGGGCAGTTTAATGCTCCAACAGGTGTAGCAGTGGATTCAAATGGAAACA 2193  
| | | | | | | |

Db 1208 GA-----CTC--TCTGGAGTGGCTGTGCCT-----  
TGGCAGTG 1238

Qy 2194 TCATTGTGGCCGACTGGGGAAACAGCAGGAT-  
CCAGGTTTTTGTATGGGAGTGGATCATTT 2252

| | | | | | | | | | | | | |  
Db 1239 ACCTT-TGGCC---AGGGCAAGTGCCTCATGACAGG---  
TACTGGG----- 1277

Qy 2253 TTGTCCTACATTAACACATCTGCTGACCCACTCTATGGCCCCC-  
AAGGCCTGGCCCTAAC 2311

| | | | | | | | | | | | | |

|

Db 1278 -TGCCC--CAGGCAGCTAAGTGCCGCCCTGCCACCAGCCCCCTATGGCTTGG----  
GAA 1330

Qy 2312

TTCAGATGGTCATGTTGTGGTTGCAGACTCTGGAAATCACTGTTTCAAAGTCTATCGATA 2371  
| | | | | | | | | | | | | |

|

Db 1331 GGCTGGGGGTCCTCTTG----GCCAACAGGGTGAAACCCCATCTCTA---  
CTAAAAACA 1382

Qy 2372 CTTACAGTAATGGTGGGCA-

GGTGGATACCCGCTTCCATGGTCTTGCACTATAAACTGGA 2430  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1383 CAAAATTA--GCCAGGCATGGTGG-TGCGCGC--CTGTAGTC-----  
CCAGCTACTCAA 1432

Qy 2431  
ATGGATTTCTCAATGCGGGACCAGATTATGACTAGAGTTTTTATGCCAGAAGGAATCATT 2490  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1433 GAGGCT-----GAGGCAAGAGAATCGCTTGA-----ACCCG--  
GGAGTCAGA 1472

Qy 2491  
GGTGAACCTTTCCAAGGTTATTTCTGAATGTAACAATTTTCCTTAAAAATGACTTATCCAAT 2550  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1473 GG-----TTGCAG--TGAGCCGAGATC-----GC---  
GCCA-- 1498

Qy 2551  
TTCTGTATTTACCTTTAGGGTTAAAAAACTCTTCTACTGAATCTATAAACTGC-- 2608  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1499 --CTGCACTCCAGCCTGCTGATAGAGCAAGACTC--CATC----  
TCAAAAAACAACCC 1550

Qy 2609 -  
AGTTTTACATCTGTGAACCTATGGCTTAAGGGACAGGATTTATGTAGCTAACTAATTTT 2667  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1551 AAAATTTGC-----CTGGCAT-GGTGGCAGGC-ATCTG----  
TAATCCCA---- 1589

Qy 2668 GCAAATC---  
AAACAGACACTTAAAAAACTAGCATATGTAAAGGTATTCGTTAATCCTG 2724  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 1590 GCTACTCGGGAGGCTGAGACAT--GAGAGCT-GC-----  
TTGAACCTG 1629

Qy 2725  
TGAATGGTAGCTTTTGCACAGAACTTCCAAAAGCAAAACAAAACAAAATCTATTGTAGT 2784  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1630 GGA--GGCAGAAGTTGCAGTGAG---  
CCGAGATCACACCA----- 1664

Qy 2785  
TATATACTTCATTTAACCTAGGTCACAAGACCCAGGGAATCTTCTAACCTCACTTTTACA 2844  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1665 -CTGCACTCC---AGCCTGGGT-----GACAGAGCGAGAC-  
TCTGTCC----- 1702

Qy 2845  
GTAGGTATTACTCTTGTGACATTTTTTTGGTTATCAACAATAAATATAAATTACTTTGG 2904  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1703 -----CAAAAAATCAA-  
AAAAATCACTTTTG 1727

Qy 2905  
AAAAAGTAAGGCTGTCTTGCAAATGATCCCAGCTCTGATTAGCAGCCCTCTGGAGTTCA 2964  
| | | | | | | | | | | | | | | | | | | | | |  
|

Db 1728 GTAGAG-----ATGCA-----CTCTC-GCTATGTT-----GCC--CAGG-----  
CT 1760

Qy 2965  
GAACTTAAGTATCAGTGCAAATTTCTCAACCTTTCTGGGTTAGACAAAGATCCTTTTTTTG 3024

Db 1761 GGTCTTGA-----ACTC-----CTGGGCT---  
CAAT----- 1783

Qy 3025  
TGTGTTCTTTTACCACCCCTTTGGCTCACCTTGTATCAGCAAACAAAGTACTTCTTCAG 3084  
| | | | | | | | | | | | | | | | | | | | | |

Db 1784 --TGATCTT-----CCCACCTTG-----  
ACCTCCAAAGTGCT-----G 1814

Qy 3085  
GGAAACCTGAAATTTCTAATGCCTTGAAAAGCATATTACAAAAGTAATGCTACCTTTTGG 3144  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1815 GG-----ATTACAGGTGTGA-  
GCCACC----- 1835

Qy 3145  
GAAACAACTGCCCCGTTAACTCCAGATCATTGCACTGGAATGTAATCAAGAAAGTTAGT 3204  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1836 -----ATGCC----TAGCCTCAGGGAATT---CTTATAAGAACTCTATGAAG-  
TAGG 1879

Qy 3205 CATGTTTTATGTACCATGTTTTACACGTGTCTCTTCTCTTCGACTTCCT-  
GAAAGCGAA 3263  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1880 CAT-----CACCA-----TCTTCTCT--  
GTATCCATGGAAAGAGAG 1913

Qy 3264 AGCTTTACCTCCTGCAAATGTCAGC--  
ACATGTAGTAGGACACCAGTATCCTAGGACAGA 3321  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1914 G-----CCTAGAGATGTATGCTAACTTG-----  
CCCAAGCTCACA 1948

Qy 3322  
GAGCCATAAGTAGCCCTTTGGAGGACTGATGGTGTCAACCAAAGGCATGTGATTGATTAA 3381  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1949 TAGCCAGGGTAGC-----ATAGCTGG-  
GATGTTGAGCTGAGGCCGGAGGAGAAGTAG 2000

Qy 3382 TGATTCCCCCTTAGAAAGCAAGTGTTAC-  
CAAAGTTGTGTTATCTTGAAAGCATTACAGG 3440  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2001 C-AGTCGCTGGCAGAGCACACAGGCTGCTCTGGG--GGATGAGCTGG--  
TGCGTTTAAGG 2055

Qy 3441  
TAAGGGCATGTTATGGTTATTTATCATTGTTTAATGAATAGTAGAGGTGTCAAGGGACTA 3500  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 2056 AACAGGCCAGCACTGG--  
CATTTCGCAAGCAGTGGGGAAGGGGAGAGATGCCGAGGTGGTC 2113

Qy 3501  
TGTATACATGATTAGGGTAAGATAGAATGTATTATATATATATATATATACACACACA 3560  
|||| | ||| | | || || | || | | || | |

|  
Db 2114 AGTAT-CCTGACTT---TCAG--  
AGGCCTTTTTTTGTTTGTTTTAATTTTTGCT-----A 2162

Qy 3561  
CATATATATAGCTGAATCTTTGGTGTATTGAAATAGGCAGCACTCTGAAAGACAGAAGCT 3620  
|| |||| | || ||| || | |||| || || |

Db 2163 GATTGATATTAAAACTC---ATGT-----GGAGGAAGCTC--  
AAGGAATGTTTAG 2207

Qy 3621  
TCGTCCAGCCACTCTTCAGCACATTCTTTACTAAGCAGTTTAAAGCCGTCCTAGTGGAG 3680  
| ||| |||| | || ||

Db 2208 AAGACCA-----AAAGTC--  
CCCAATG--A 2228

Qy 3681  
CAAGCCCTAAAGCAGATTTAATTTTTGCCATTTTCCAAGAATGACGGTGGTGGCTTTTAG 3740  
|| | ||||| ||||| | || || || | ||

Db 2229 CAGGAACAAAAGCAAC--  
CAATTTTTAACTTTCTTCTCATTCTGT----- 2274

Qy 3741  
TCAGAAAATGGCCTTCTGTGCTTTCAAAAAAAAAACAAAAAAAAACCACACACACACAT 3800  
||| || |||| |||| | |

|  
Db 2275 -----TTTCATTGATTTC-----  
CCACATGTAGTCCT 2301

Qy 3801  
AAAAAACCCAACAGGTCAAAATAAAAGTTGAAGTTGAGTTACATTTAATTTAAATATAAA 3860  
| || | ||| | |||| || | || ||

Db 2302 --TTTGCTCAGGAAGTC-----  
TTTGGGGAAATTAAGGATCTTTGAA----- 2341

Qy 3861  
TGCATTTTGAGAAATGTTAAGAACAATTTAGTCAATCGTTTCATCTGTCATTGGTACTGTA 3920  
|| | ||| | || || || || |||| | | |||||

||||  
Db 2342 -GC--TCTGAAATAGGT---GATCAGGTTAGT-----GGT-GTCTGTCA-----  
GCTGTC 2384

Qy 3921  
AAATAAGCTGTGGTCTATTTCCACTGTTTAATTTTCTACTCAGTTCTACCAAATAGGATG 3980  
|| | ||| || ||| ||||| ||

|  
Db 2385 TAA-----GAGGT-----TGGAAAATGAACTACTCA-----  
AGATAG 2416

Qy 3981  
TCATGTTTGACATTTTTGATAGTGACTTTGGGGTCTTCTTCACTGAAAGCACCTTAGAAC 4040  
||| || | | |||| || |||| || |||

Db 2417 TCA----CGAAAATACTGAAAG----TTTG----

ATTTTTC----- 2445

Qy 4041

TGTACTATAAGAAAACATTTCCCCTATGTATAATTATATGAATGTGATGTTTATTGCTTA 4100

||||| ||| |||

|

Db 2446 -----TTTCC-----

ATATTTGA-----A 2459

Qy 4101

TTAATTTATAAATTCAGTCATTCTCTATATAGGACTTCTTAAAATTTAGAAGGGAAATCTA 4160

||||||| | ||| | | ||| | |||||

Db 2460 TTAATTTT-----TCTGTTT--GAC-----

TGGAAGGG----- 2486

Qy 4161

GCTACTTCAAATTGCTCTGTTAAATTTATTATGCCCAAATCAACCTCTGAAAAAAGGTTTT 4220

|| ||| ||| | || ||||| | |

Db 2487 -----GT----TTTTGTATAACTAA---

AACCTCAGCGCATA----- 2516

Qy 4221 TCCAGGAAGATTTACATTTAGGTTTA-

ATATTTTTTTTAGTTAGGTAGAGTTTTAAAAAAT 4279

| | ||||| | ||| | || ||| | | | |

|

Db 2517 ---AAGGAGATTTAAA---AGGAGCACATGATTTAGTGGGTGGGCCATG-----

AA 2561

Qy 4280 ACTTGAGCCTGTCCGTGATAAAGCTATAAAAT--

TCAATAACTTTTTAGAATGTTAAATG 4337

||| ||| | ||| | ||| | ||||| || | || ||||

Db 2562 ACTAGAG-----ATGGGATTTGGGGGTGAATTTGTCAATATCT-----

GGATTTTAA--- 2608

Qy 4338

AAGACACTGTTTCCTAACATCAGTGAGATACATCTTTGAATTTAAACATTCATATTTACT 4397

||| |||| || || || ||| | |||

|

Db 2609 -----TCCAGACATCTCTG-----CT-----AACGAGC--

CTTTGGT 2638

Qy 4398

GAGTACCTACTAGGTACCAAGTACTCTTTTAGGCACTGGAAATACAGTGATGGACAAAAC 4457

||| || | || ||| | ||| ||| | ||| ||| | |

Db 2639 AAGTCACTTC-AGATACTTT-TCCTCCTTTTAC-----AAAGAGAGGGCTGG-

CTTA-- 2688

Qy 4458 AGGTAAAAAATCGCTGCCCCCT-

CAGAGCTGACATTCTGGGGTGGAATTTCAATTTTGCC 4516

|| | | ||||| | ||| |||| | | || |||| | ||

Db 2689 --GTTATTTGCCAAAGCCCCTTCCAGGCCTGAATTCCACAAGTACGATTTAC----

TGTA 2742

Qy 4517

ACGTACTAACGTTCTGCACAAAAGACAGGCTAGACTCTTGTCTAGATTGTTTAAAAGAAA 4576

|| || | ||| || |||| ||| ||| ||| | |||

|

Db 2743 GTGTCTTATCACTCT-----TTCATGTCACAATAGCGT----

GGAG 2779

Qy 4577  
CTTTTCAAATTGGTTACATTAATTTTAGTTTTATTTTCACAAGTAAAAATGGCTTTTTTATT 4636  
| | | | | | | | | | | | | | | | | |  
Db 2780 CATTAGAGAAAAG--CCTAGACTTTTAGTTGA---  
TAGCCAGTTGAAATATCATT----- 2829

Qy 4637  
TAGATTCTTTCTGTCCCAGGCTGTTGATCTTAAAACTAGTTGATTTAAAGAGTTTTTTTTTG 4696  
| | | | | | | | | | | | | | | | | |  
|  
Db 2830 --GAT-----AGAATTTTAGTTTTAGGAAAAATTGGTTT-----  
GATTCTAG 2870

Qy 4697  
CACAACATTTCAATTATTTGTGAACTTAGAAATTAACCTACAATCTAACCAGCCATCA 4756  
| | | | | | | | | | | | | | | | | |  
|  
Db 2871 --CTTTATTACTATTAGGTATGTGAGCTTGG-----  
GCAA--A 2904

Qy 4757  
TATCATATCCTATCAGGCTAGATATCTCAATAGTAGACTGAATACAAAGCTAATTTTTTTT 4816  
| | | | | | | | | | | | | | | | | |  
| | |  
Db 2905 TCGCTTAATCTTTGAGTCTAGTTTTCTCTCAAAATGA--  
GAACATTAGGCTAAATGATTT 2962

Qy 4817  
TACATGTCAATATTGGCACAAACTGGAATGAAAGAATAGTTTGATTGAGACCTGCTCCAC 4876  
| | | | | | | | | | | | | | | | | |  
| |  
Db 2963 -----CCG-----AGTTT-----  
CCAGCT---- 2976

Qy 4877  
TATGTGTTGCTAAAAACACATGCTATGAGCACTCGAGGAAACACTATTTTTTTTCCAAAAA 4936  
| | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | |  
Db 2977 -----AGTCCTAGAG----  
TTCTATATTTCTACATA--- 3003

Qy 4937  
ATATGTGATTATATATGTTAAAGTATAGATAACATTTTACACTTGGATACATATGTGCAT 4996  
| | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | |  
Db 3004 -----GTTGAATTAT-----TTTATCA-----  
TGCTG 3025

Qy 4997  
TTACTGTATTTCTTGGTAAGCATATTTTTGGGGGAAAGTGCTGCTGATATGATACAAGTA 5056  
| | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | |  
Db 3026 TTGCTGGGGAATATGACTAACCCTTTT-----GAA---  
GCTACTAATTTTAT----- 3069

Qy 5057  
GACAAAATTTAAATGAAATTTTGTACATTCTATGGAAAATGGTTTCTGGTAAACTGAGA 5116  
| | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | |  
|  
Db 3070 GTCGAGCTTTAAA-----GTC-CAT-----AATTGTTATCT-----  
TCAGAAA 3106

Qy 5117  
AGGATATTAAAAATAAGTGGCTTTTTTCTGGGCTACCATTATTGTTTGATTTCTCTTTGTC 5176

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      |               | | | | | | | | | | | |
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Db      3107 A-----TATTATTTGACCTAC-----AGTATG-----
TCCAAATC 3136

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Qy      5177
AAGTGTATAGAACCTGTCATACATTCATGATAAGTAGCACTGAAAAATTACTCATTCAA 5236
      | | | | | | | | | | | | | | | | | |
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Db      3137 AATTTAATAAAATC--
GCTTTATAACAGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 3194

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Qy      5237 TTTCCCTGGGCACG 5251
      | | | | | |
Db      3195 GGCCACATGTGCTCG 3209

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RESULT 4
US-10-478-914-4/c
; Sequence 4, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 4
; LENGTH: 3210
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-4

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Query Match          19.0%; Score 7277; DB 1; Length 3210;
Best Local Similarity 35.5%; Pred. No. 0;
Matches 1963; Conservative 0; Mismatches 1130; Indels 2434;
Gaps 307;

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Qy      13 CGGGCTGCGGGGAGC-----
TAAGTCCCCAGATTGGAGGA 47
      | | | | | | | | | | | | | | | |
|
Db      3209 CGAGC-
ACATGTGGCCTTTTTTTTTTTTTTTTTTTTTTTTTTTTCTGTTATAAAGC 3151

Qy      48 GGCTGGCT---CTGGTCTTCGATGCACAGGAGTGGCCGTTATGGAACGCAGCAGC-
AGCG 103
      | | | | | | | | | | | | | | | |
|
Db      3150 GATTTTATTAAATTGATTTGGACATACTGTAG-
GTCAAATAATATTTTCTGAAGATAACA 3092

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Qy 104 TGCAGGGTCAAAGACAGCCGGCCCCCATGTCAGTGGT--CT--  
 AGGATGGCCAGTGAAG 159  
 | | | | | | | | | | | | | | | | | | | | | |

Db 3091 ATTATGGACTTTAA-----  
 AGCTCGACATAAAATTAGTAGCTTCAAAGGGTTAGT---- 3041

Qy 160  
 GCACCAACATCCCAAGTCCTGTGGTGCGCCAGATTGACAAGCAGTTTCTGATTTGCAG-- 217  
 | | | | | | | | | | | | | | | | | | | | | |

Db 3040 ----CATATTCCCA-----  
 GCAACAGCATGATAAAATAATTCAACTATGTAGAA 2995

Qy 218 -TATATGCCT---GGAACGGTACAAGAATCCCAAGGTTC---  
 TCCCCTGTCTGCACACTT 270  
 | | | | | | | | | | | | | | | | | | | | | |

Db 2994 ATATAGAACTCTAGGACTAG--CTGGAAACTCGGAAATCATTTAGCCT-  
 AATGTTCTCAT 2938

Qy 271  
 TCTGCGAGAGGTGCCTGCAGAACTACATTCTGCCACAGTTTAACCCTCTCCTGCCAG 330  
 | | | | | | | | | | | | | | | | | | | | | |

Db 2937 TTTGAGAG-----AAAAGTAGA-----CTCAAAGATTAAGCGATT--  
 TGCCCA- 2897

Qy 331  
 TGTGCCGCCAGACCTCCATCCTGCCCGAGAAAGGGGTGGCCGCGCTCCAGAACAATTTCT 390  
 | | | | | | | | | | | | | | | | | | | | | |

Db 2896 -----AGCTCACATACCTAATAGTAATAAAGCTAG----  
 AAATCAAACCAATTT-T 2851

Qy 391 TCATCACAAACCTGATGGACGTGCTG-  
 CAGCGAACTCCAGGCAGCAACGCTGAGGAGTCT 449  
 | | | | | | | | | | | | | | | | | | | | | |

Db 2850 TCCT---AAAAGT---AAAATTCTATCAATGATAT-----TTCAAC-----  
 TGGCT 2811

Qy 450  
 TCCATCCTGGAGACAGTCACTGCTGTGGGTGCGGGAAGCCTCTCTCTTGCCCAAACCAC 509  
 | | | | | | | | | | | | | | | | | | | | | |

Db 2810 ATCAAC---TAAAAGTCTAGGCTTT-----TCTCTAATGCTCCA--  
 CGC 2772

Qy 510 GATGGGAATGTGATGGAATTTTACTGCCAGTCCTGTGAGACTGCCATGTG----  
 TCGGGA 565  
 | | | | | | | | | | | | | | | | | | | | | |

Db 2771 TATTGTGACATGAAAGAGTGATA-  
 AGACACTACAGTAAATCGTACTTGTGGAATTCAG-- 2715

Qy 566 GTGCACGGAGGGGGAGCACGCAGAGCACCCACAGTTCCACTCAAGG--  
 ATGTGGTGGA 623  
 | | | | | | | | | | | | | | | | | | | | | |

Db 2714 --  
 GCCTGGAAGGGGCTTTGGCAAATAACTAAGCCAGCCCTCTCTTTGTAAAAGGAGGAA 2657

624 CAG--CACAAG-GCCTCGCTCCAGGTCC---  
AGCTGGATGCTGTCAACAAAAGGCTCCC 676  
|| | ||| | || | ||| | | |||| | | |  
||  
Db 2656 AAGTATCTGAAGTGACTTACCAAAGGCTCGTTAGCAG--AGATGTCTGGATTAAAT-  
CC 2600  
Qy 677 AGAAATAG----  
ATTCTGCTCTTCAGTTTCATCTCTGAAATCATTTCATCAGTTAACCAACC 732  
||| || | |||| | | | ||||| || | ||  
|||  
Db 2599 AGATATTGACAAATTCACCCCCAAATCCCATCTCTAGTTTCA-----  
TGGCCCACC 2549  
Qy 733  
AAAAGGCCAGCATCGTGGATGACATTCATTCCACCTTTGATGAGCTCCAGAAGACTTTAA 792  
| | ||| || | || | | |||| ||| ||| ||  
||||  
Db 2548 CA-----CTAAATCATGTGCTCCTTTTAAATCTCCTTT-ATGCGCT----  
GAGGTTTTAG 2499  
Qy 793 ATGTGCGCAAG-----  
AGTGTGCTGCTTATGGAATTGGAGGTCAACTATGGCCTCAAAC 846  
| | | || || | | |||| | |||| ||||  
|||  
Db 2498 TTATACAAAAACCCCTTCCAGTCAAACAGAAAAAATT--  
AATTCAAATATGGAAAGAAAA 2441  
Qy 847 A-  
CAAAGTCTCTCCAGTCGCAGCTGGATACTCTGCTCCAGGGGCAGGAGAGCATTAAAGAGC 905  
| |||| | |||| | | ||| || | || || |||  
Db 2440 ATCAAA--CTTTCAGTATTTTC--GTGACT--ATCTTG----  
AGTAGTTCATTT----- 2397  
Qy 906 TGCAGCAACTTC-ACAGC--GCAGGC-  
CCTCAACCATGGCACGGAGACCGAGGTCTCTACT 961  
| || | ||| |||| ||| | || | | | | |||  
|  
Db 2396 TCCAACCTCTTAGACAGCTGACAGACACCACTAAC-----  
CTGATCACCTATT 2349  
Qy 962  
GGTGAAGAAGCAGATGAGCGAGAAGCTGAACGAGCTGGCCGACCAGGACTTCCCCTTGCA 1021  
||| |||| | || | || | |||||  
|  
Db 2348 -----TCAG-----AGCTTCA-AAGAT-----  
CCTTAATTTCCCCAAAGA 2315  
Qy 1022 C--CC---GCGGGAGAACGACCAGCTGGATTTTCATCGTGGAAACCG--  
AGGGGCTGAAGA 1074  
| || || || || || | ||| ||| || |||| | | | ||  
|  
Db 2314 CTTCTGAGCAAAAGGACTACATGTGGGAAATCA--  
ATGAAAACAGGAATGAGAAGAGAA 2257  
Qy 1075  
AGTCCATCCACAACCTCGGGACGATCTTAACCACCAACGCCGTTGCCTCAGAGACAGTGG 1134  
||| | || | || | ||| |||| || |||  
||  
Db 2256 AGT-----TAAAAATT--GGTTGCTTTT-----GTT-CCT-----



ATAAGAATT----- 1852

Qy 1660  
GTAACAACCAATGTGTGCAGATATTTTCCAATGATGGCCAGTTCAAAGTCGTTTTGGCA 1719  
|| | || ||| |  
||||  
Db 1851 -----CC-----CTGA-----GGC-----  
TAGGCA 1837

Qy 1720  
TACGGGGACGCTCTCCGGGGCAGCTGCAGCGGCCACAGGAGTGGCTGTACATCCCAGTG 1779  
| || ||| | ||| |||| |||||  
Db 1836 T-----GGTGGCT-----CACAC-----CTGTA-  
ATCCCAG-- 1812

Qy 1780  
GGGACATAATCATTGCCGATTATGATAATAAATGGGTCAGCATTTTCTCCTCCGATGGGA 1839  
|| | ||| || |||| |  
|||||  
Db 1811 ----CA----CTTTG-----GA-----GGTCA-----  
AGGTGGGA 1790

Qy 1840  
AATTTAAGACAAAAATTGGATCAGGAAAGCTGATGGGACCCAAAGGAGTTTCTGTGGACC 1899  
| |||| | || | ||| ||||| |||  
||||  
Db 1789 A-----GATCA-----ATTGAGCCC--AGGAG-TTC--  
AAGACC 1761

Qy 1900 GCAATGGGCACATTATTGTTGTGGACAACAAGGCGTGC-  
TGCGTGTTTATCTTCCAGCCA 1958  
|| ||| |||| ||| | ||| |||| |  
|||  
Db 1760 -----AGCC-----TGGGCAACATAGCGAGAGTGC-----ATCT--  
CTACCA 1726

Qy 1959 AACGGGAAAATAGTCACCAGGTTTGGTAGCCGAGGAAATGGGGACAGGCAGT-TTGC-  
AG 2016  
|| | || | |||| | | ||||| ||| | ||  
Db 1725 AAAGTGATTTT-----TTTGAT-----TTTTTGGGACAG--  
AGTCTCGCTCT 1686

Qy 2017 GTC-CCCATTTTGCAGCTGTAAATAGCAATAATGAGATTATTATTACAGATTTC--  
CATA 2073  
||| |||| |||| | ||| | || | || | || | ||  
Db 1685 GTCACCCA-----GGCTG--GAGTGCAGTGGTGTG-----  
ATCTCGGCTCACTGCAAC 1640

Qy 2074  
ATCATTCTGTCAAGGTGTTTAATCAGGAAGGAGAATTCATGTTGAAGTTTGGCTCAAATG 2133  
|| || | |||| || ||| || ||||| ||||  
Db 1639 TTCTGCCT-CCCAGGT-----TC---AAGCAGCTCTCATGT-----  
CTCA---- 1604

Qy 2134  
GAGAAGGAAATGGGCAGTTTAATGCTCCAACAGGTGTAGCAGTGGATTCAAATGGAAACA 2193  
|| |||| | |||| | | ||| |||  
|  
Db 1603 -----GC-----CTCCC-----  
GAGTAGCTGGGATTACAGATGCCTGCC 1570

Qy 2194 TCATTGTGGCCGACTGGGGAAACAGCAGGATCCAGGTTTTTGATGGGAGTGGATCATTTT 2253  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1569 ACCATG-----CCAGGCAAATTTTGGGTT---GTTTTTTTTTGAGA-  
 TGGA----- 1529

Qy 2254 TGTCTACATTAACACATCTGCTGACCCACTCTATGGCCCCCAAGGCC-  
 TGGCCCTAACT 2312  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1528 -GTCTTGCTCT-----ATCAGCAGGC-----TGG-----  
 AGTGCAGTGGCGCGATC- 1489

Qy 2313 TCAGATGGTCATGTTGTGGTTGCAGACTCTGGAAATCACTGTTTCAAAGTCTATCGATAC 2372  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1488 TCGGC---TCA-----CTGCAACCTCTG--ACTCCCGGGTTCAAG-----  
 CGATT 1448

Qy 2373 TTACAGTAATGGTGGGCAGGTGGATACCCGCTTCCATGGTCTTGCACTATAAACTGGAAT 2432  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1447 T-----CTTG-----CCTCAGCC----TCTTG----  
 AGTAGCTGGGA- 1419

Qy 2433 GGATTTCTCAATGCG-  
 GGACCAGATTATGACTAGAGTTTTTATGCCAGAAGGAATCATTG 2491  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1418 -----CTACAGGCGCGCACCA-----  
 CCA----- 1400

Qy 2492 GTGAACTTTCCAAGGTTATTTCTGAATGTAACAATTTCTTAAAAATGACTTATCCAATT 2551  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1399 -----TGCCTGGCTAATTTTTG--TGT-----  
 TTTTAGTAGAGATG----- 1366

Qy 2552 TCTGTATTTACCTTTAGGGTTAAAAAACTCTTCTACTGAATCTATAAACTGCAGT 2611  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1365 ---GGGTTTCACCCTGTTGGCCAAGAGGACCCC-----  
 CAGC--- 1332

Qy 2612 TTTACATCTGTGAACATATGGCTTAAGGGACAGGATTTATGTAGCTAACTAATTTTGCAA 2671  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | |  
 Db 1331 ----CTTC-----CCAAGCCATAGGGGGCTG-----GTGG-----  
 GCAG 1302

Qy 2672 ATCAAACAGACACTTAAAAAACTAGCATATGTAAAGGTATTTCGTTAATCCTGTGAATGG 2731  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1301 GGC-----GGCACTT-----AGCT-GCCT-----GGGGCACCCAGTA--  
 CCTGTCAT--G 1262

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2732 TAGCTTTTGCACAGAACTTCCAAAAG-
CAAAACAAAAACAAAATCTATTGTAGTTATATA 2790
      ||  |||| | |  |||| | ||  | ||  || | |
|
Db      1261 AGGCACTTGCCCTGG----
CCAAAGGTCACCTGCCAAGGCACAGCC-----A 1220

Qy      2791
CTTCATTTAACCTAGGTCACAAGACCCAGGGAATCTTCTAACCTCACTTTTACAGTAGGT 2850
      || ||  |  |||| ||  ||| || ||  | |  |||

||
Db      1219 CTCCAGAGA-----GTCAAGAGGAGCAGAGACTC--CAGA-----
GCAGATGGA 1178

Qy      2851
ATTACTCTTGTGACATTTTTTTGGTTATCAACAATAAATTACTTTGGAAAAAG 2910
      | |  |||  || | || | || || |  ||||

||
Db      1177 AGGA---GAGTGG-GCTTCTGGGGATTGCACCAAGGA-----
GGAAGCAG 1137

Qy      2911 TAAGGCTGTCTTGCAAATGATCCCAGCTCTGATTAGCAGCCCTCTGGAGTTC--
AGAAC 2968
      | || |||  |||  |||  |  || || |  || |||| |

|
Db      1136 AAGGGATGTGCAGCAG-----CAGAAAAGG--
AGGAGGACCGGGGGGTCTGAGGGC 1087

Qy      2969 TTAAG--TATCAGTGCAAATTTCTCAACCT--
TTCTGGGTTAGACAAAGATCCTTTTTTG 3024
      || | || || || || || |  |||||  ||

Db      1086 TTGGGGTGATGAGGCCAGAGTTC-CAAACAGGGTCTGGGT---
GCAGG-----A 1042

Qy      3025
TGTGTTCTTTTCACCACCCCTTTGGCTCACCTTGTATCAGCAAACAAAGTACTTCTTCAG 3084
      || | |  |  || || |||| | || ||

Db      1041 TGAGGAC-----
AGAAGAAAACAGAGAAC----- 1018

Qy      3085
GGAAACCTGAAATTTCTAATGCCTTGAAAAGCATATTACAAAAGTAATGCTACCTTTTGG 3144
      || |  |||  | || | || | |||

Db      1017 -----CCAAAGGGGCA-----AGAGGT--
TGTGCCCTT---- 991

Qy      3145
GAAACAACTGCCCCGTTAACTCCAGATCATTGCACTGGAATGTAATCAAGAAAGTTAGT 3204
      |||  || ||||  ||  ||||  || || | |

|
Db      990 -----ACT-----TTCACCTC----TC-----CTGG-----
GAGGAGGATGG- 964

Qy      3205
CATGTTTTATGTACCATGTTTTACACGTGTCTCTTCTCTTCGACTTCCTGAAAGCGAAA 3264
      ||||  |||| |  || || | |

|
Db      963 -----GTACAC-----CACAC-AGT-----
TGGATGGTGCA 939

```

Qy 3265 GCTTTACCTCCTGCAAATGTCAGCACATGTAGTAGGACACCA-  
GTATCCTAGGACAGAGA 3323  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 938 TCTTTGCC-----TGTCTGCACCTGCAG-----  
CTCCATGGCACCATGGACCCTGT 893

Qy 3324  
GCCATAAGTAGCCCTTTGGAGGACTGATGGTGTCAACCAAAGGCATGTGATTGATTAATG 3383  
| | | | | | | | | | | | | | | | | | | | | |  
Db 892 GC-----TCC-----GAGTGGTGGTG----CC-----  
TGAT----- 871

Qy 3384  
ATTCCCCCTTAGAAAGCAAGTGTTACCAAAGTTGTGTTATCTTGAAAGCATTACAGGTAA 3443  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | | | |  
Db 870 -CTCCACC-----ACCA-----GGCAGCA-----  
GTAG 849

Qy 3444  
GGGCATGTTATGGTTATTTATCATTGTTTAAATGAATAGTAGAGGTGTCAAGGGACTATGT 3503  
| | | | | | | | | | | | | | | | | | | | | |  
Db 848 AGGC-----  
CGCTATCCAG----- 835

Qy 3504  
ATACATGATTAGGGTAAGATAGAATGTATTATATATATATATATATATACACACACACAT 3563  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | | | |  
Db 834 -----CAGGGTCAGGTTG-----  
CGCA- 818

Qy 3564 ATATATAGCTGAATCTTTGGTG-  
TATTGAAATAGGCAGCACTCTGAAAGACAGAAGCTTC 3622  
| | | | | | | | | | | | | | | | | | | | | |  
Db 817 -----TGGTGATGGAGAAGTTGCCA-----  
TGGTGGTCGGAGGCCGA 781

Qy 3623 GTCCAGCCACTCTTCAGCAC-  
ATTCCCTTTACTAAGCAGTTTAAAGCCGTCCTAGTGAGC 3681  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | | | |  
Db 780 CTCCAGCC---CGT-GGCGCTGAGCCAGGTCGTGGCTGGTGTGTCAG-CCTGGTG--  
GC 728

Qy 3682  
AAGCCCTAAAGCAGATTTAATTTTTGCCATTTTCCAAGAATGACGGTGGTGGCTTTTAGT 3741  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | | | |  
Db 727 CT-CCATGGTGCAGGTGAAG-----GTCCTGGAACGT--  
GAGGTTGCGGATGGG 682

Qy 3742  
CAGAAAATGGCCTTCTGTGCTTTCAAAAAAAAAAACCAACACACACACACATA 3801  
| | | | | | | | | | | | | | | | | | | | | |  
Db 681 CC-----GGCGCTCTGAGC-----AGGTCTGCAC-  
CTCGC--- 653

Qy 3802

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AAAAACCCCAACAGGTCAAATAAAAAGTTGAACCTTGAGTTACATTTAATTTAAATATAAAT 3861
                |||                               | |||   ||   ||
Db          652 -----CCC-----
TCGAGCTGCGGTACCA----- 634

Qy          3862
GCATTTTGAGAAATGTTAAGAACAATTTAGTCAATCGTTCATCTGTCATTGGTACTGTAA 3921
                | | |||               ||||               ||||   ||||
Db          633 -CGTCTTG-----TAGAA-----GGTCA-----
CATC----- 613

Qy          3922
AATAAGCTGTGGTCTATTTCCACTGTTTAATTTTCTACTCAGTTCTACCAAATAGGATGT 3981
                |||   || | |||| |               || || ||
||
Db          612 -----GTGCCCTTTGTCCACAG-----
GGCCCAAGAGCCTG- 582

Qy          3982
CATGTTTGACATTTTGTAGTGACTTTGGGGTCTTCTTCACTGAAAGCACCTTAGAACT 4041
                || |               |||   |||| | ||
||
Db          581 CAGG-----TGAGGGTGACGTT-----
CT 563

Qy          4042
GTACTATAAGAAAACATTTCCCCTATGTATAATTATATGAATGTGATGTTTATTGCTTAT 4101
                |               |||| | |
Db          562 G-----
CCCCTCGGGA----- 552

Qy          4102
TAATTTATAATTCAGTCATTCTCTATATAGGACTTCTTAAAATTTAGAAGGGAAATCTAG 4161
                ||| ||| |               |||| |
Db          551 -----CAGACATAC-----
AGGGAATACGG- 532

Qy          4162
CTACTTCAAATGTCTGTAAATTTATTATGCCCAAATCAACCTCTGAAAAAAGGTTTTT 4221
                |               | ||| |||| |
Db          531 -----CGTGGCGACCT-
TGAAGGCTG----- 512

Qy          4222
CCAGGAAGATTTACATTTAGGTTTAATATTTTTTTAGTTAGGTAGAGTTTTAAAAAATAC 4281
                |||
Db          511
CCA----- 509

Qy          4282
TTGAGCCTGTCCGTGATAAAGCTATAAAATTCAATAACTTTTTTGAATGTAAATGAAGA 4341
                || | ||               ||               |||   | | | ||
Db          508 -----CCGGACC-----TGC-----TCA-----
GAGAGAGGAGAG 484

Qy          4342
CACTGTTTCCTAACATCAGTGAGATACATCTTTGAATTTAAACATTCATATTTACTGAGT 4401
                | ||||   ||| ||               ||| ||
Db          483 CCCTGTCACCTGAC-----
TGATCCA----- 463

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Qy 4402  
ACCTACTAGGTACCAAGTACTCTTTTAGGCACTGGAAATACAGTGATGGACAAAACAGGT 4461  
                          || |       |||||               |||  
Db 462 -----GTGC-----TACTC-----  
CTG----- 451

Qy 4462  
AAAAAATCGCTGCCCCCTCAGAGCTGACATTCTGGGGTGGGAATTTTCATTTTGCCACGTA 4521  
                                  || | || |||||               |||| | |       || ||| |  
|  
Db 450 -----GCAACCCCAGAGC-----GGGGAAGAA-----CCTTAGCCTC-  
TG 417

Qy 4522  
CTAACGTTCTGCACAAAAGACAGGCTAGACTCTTGTCTAGATTGTTTAAAAGAACTTTT 4581  
                          |||       || | ||       |||||| ||       | |||| || |       || |  
Db 416 CTA-----CTTCCCAGCC-ACAGGCCAGGGGCATGTC-AGCT-----  
GACCTCC 375

Qy 4582  
CAAATTGGTTACATTAATTTTAGTTTATTTTCACAAGTAAAAATGGCTTTTTTATTTAGAT 4641  
                          | || | | | ||       | | | |||||  
Db 374 CTAA--GACTGCCTTC-----  
TGCATTTGTTTACAAACCC----- 342

Qy 4642  
TCTTTCTGTCCCAGGCTGTTGATCTTAAACTAGTTGATTTAAAGAGTTTTTTTGCACAA 4701  
                          | ||       ||| |||||               ||| |       |||  
||||  
Db 341 -CACTCCATCCTAGGCTGTTG-----TAGGGG-----GAGT-----  
CACAG 307

Qy 4702  
CATTTCAATTATTTTGTGAACCTAGAAATTAACCTACAATCTAACCAGCCATCATATCA 4761  
  | ||| |       ||| |  
Db 306 -----AAGCTTCC-----  
CCAAC----- 294

Qy 4762  
TATCCTATCAGGCTAGATATCTCAATAGTAGACTGAATACAAAGCTAATTTTTTTTACAT 4821  
                          | || |       |||               ||| || |       |  
|||  
Db 293 -----TAGGGGTG-----CTC-----CTGGATGC-----  
TGGACAG 268

Qy 4822  
GTCAATATTGGCACAAACTGGAATGAAAGAATAGTTTGATTTCAGACCTGCTCCACTATGT 4881  
                          | ||       || | | ||| | | | ||       |||| ||| | |  
|||  
Db 267 GGCA-----GGGAGAGACTTGAGGGGCAG-----TGATGCAGTCGGG-----  
TGT 228

Qy 4882  
GTTGCTAAAACACATGCTATGAGCACTCGAGGAAACACTATATTTTTTCCAAAAAATATG 4941  
                          ||                               | |||               ||||  
Db 227 GT-----CCCTC-----  
TTCC----- 217

Qy 4942

TGATTATATATGTTAAAGTATAGATAACATTTTCACTTGGATACATATGTGCATTTACT 5001  
 ||| || ||| |||  
 ||  
 Db 216 -----CAGTAGAG-----  
 TATATGCAAAACCT 195  
  
 Qy 5002  
 GTATTTCTTGGTAAGCATATTTTGGGGGAAAGTGCTGCTGATATGATACAAGTAGACAA 5061  
 | ||| | || | |  
 Db 194 G-----TTGGGTGGGAG-----  
 GCAGGT----- 177  
  
 Qy 5062  
 AATTTAAATGAAATTTTGTACATTCTATGGAAATGGTTTCTGGTAAACTGAGAAGGAT 5121  
 || | | | |||  
 |  
 Db 176 -----TGGGGAGCAG-----  
 GAAGGCT 160  
  
 Qy 5122  
 ATTAAATAAGTGGCTTTTTTCTGGGCTACCATTATTGTTTGATTTCTTTTGTCAAGTG 5181  
 || | || || || || |  
 |  
 Db 159 GTTTCGAACAGCAGCT-----CC-----  
 TTGTCCTTGGCCGCTC 126  
  
 Qy 5182  
 TATAGAACCTGTCATACATTTCATGATAAGTAGCACTGAAAAATTACTCATTCAAATTTCC 5241  
 | || | || | || | || |  
 ||  
 Db 125 TGTAGGGGCCATC-----AACAC-----CTC-----  
 TGCC 101  
  
 Qy 5242  
 CCTGGGCACGTAAGGCAAAATATTGCCGTTGGGATTTCAAGGTCAGTGACGACGCATTT 5301  
 || | ||  
 |  
 Db 100 CC-----  
 TTCC-----T 94  
  
 Qy 5302 CCTCCCAGTACAGACCCC-CCAGCCCC-  
 CCTTGCTGGACATGGGGAGGCAGAGAGTCACT 5359  
 ||| || || || | || ||| ||| |||  
 |||  
 Db 93 ACTCCTAGGACTGAACATGCCTTCCCATCCTTGC-----CAGGGAG-  
 CACT 49  
  
 Qy 5360 ---  
 TGACCATCCAGAAATACATGACTACAAGTCCTTTATGACTGTTTGCCATTTTTTTTA 5416  
 || || || | || | ||| || | | || |||  
 |  
 Db 48 AAGAGAGCA-CCTG-----CGTG--TGCAAGGCC--  
 TGGGCCAGTAGGCC-----A 8  
  
 Qy 5417 ATGGTAC 5423  
 | || |  
 Db 7 ACAGTGC 1

RESULT 5

US-10-478-914-61  
; Sequence 61, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 61  
; LENGTH: 2437  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-61

Query Match 15.9%; Score 6088.5; DB 1; Length 2437;  
Best Local Similarity 39.6%; Pred. No. 0;  
Matches 1528; Conservative 0; Mismatches 860; Indels 1471;  
Gaps 211;

Qy 5 GTTG--TCTGC-----  
GGGCTGCGGGGAGCTAAGTCCCCAGATTGGAGGAGGCTGGCTCT 57  
||| ||||| ||||| || |||  
Db 1 GTTACTTCTGCTCTAAAAGCTGCGG-----  
AATTCC----- 31

Qy 58  
GGTCTTTCGATGCACAGGAGTGGCCGTTATGGAACGCAGCAGCAGCGTGCAGGGTCAAAGA 117  
|||| |||| | |||| || | | | |  
|||||||  
Db 32 -----TCGA-GCACTG--TTGGCCTACTGGGTGTACTGTGGAGAC-----  
TGTCAAAGT 77

Qy 118  
CAGCCGGCCCCCATGTTCAGTGGTCTAGGATGGCCAGTGAAGGCACCAACATCCCAAGTC 177  
| |||| ||||| || ||| | |||  
|||  
Db 78 CTCCCGGAGCCCAATTTT-----CGGAAG--CGGTG-----  
AGTT 110

Qy 178  
CTGTGGTGCGCCAGATTGACAAGCAGTTTCTGATTTGCAGTATATGCCTGGAACGGTACA 237  
||| ||| |||| ||||| |||| | ||  
Db 111 CTG-----AAAGAAGTT-----  
CCTGCACCG---T 132

Qy 238  
AGAATCCCAAGTTTCTCCCCTGTCTGCACACTTTCTGCGAGAGGTGCCTGCAGAACTACA 297  
|| ||||| |||||  
|  
Db 133 AGTTTCCCAAG-----  
TCTGCG-----A 150

Qy 298  
 TTCCTGCCCACAGTTTAAACCCTCTCCTGCCCAGTGTGCCGCCAGACCTCCATCCTGCCCCG 357  
 ||| || || | ||| | || | ||| | || ||  
 Db 151 ATCC--CCAACCATGAGCGCCTC-----  
 GGGCGTACTGTCTTTACCCAGC--- 194

Qy 358  
 AGAAAGGGGTGGCCGCGCTCCAGAACAATTTCTTCATCACAAACCTGATGGACGTGCTGC 417  
 | || ||| || || | || | || ||| |||  
 ||||  
 Db 195 ----AAGGATGG-----GAGCAGGTGCTG----GCCAAAGTGA--  
 AACGGGCTGT 234

Qy 418  
 AGCGAACTCCAGGCAGCAACGCTGAGGAGTCTTCCATCCTGGAGACAGTCACTGCTGTGG 477  
 | | || || || | || | || ||| ||| |||  
 ||  
 Db 235 GGTTTA--CCTGGACGCCGC-CTGCG-----CCGAGAGCCTG-CA---  
 CTGGGG 276

Qy 478 CTGCGGGAAAGCCTCTC-  
 TCTTGCCCAAACCACGATGGGAATGTGATGGAATTTTACTGC 536  
 ||||| | || | ||| || ||||| ||  
 Db 277 CTGCGG---ATCCACCCGTCT---CCTGGAGGCGGTGGG-----  
 GG----- 311

Qy 537  
 CAGTCCTGTGAGACTGCCATGTGTCTGGGAGTGCACGGAGGGGGAGCACGCAGAGCACCCC 596  
 | ||| ||||| || || || |||| | |||| |  
 |  
 Db 312 --GCCCT----GACTGTCACTG-CGAGAGTTC-----  
 GAGCCCGAC 346

Qy 597  
 ACAGTTCCACTCAAGGATGTGGTGGAACAGCACAAAGGCCTCGCTCCAGGTCCAGCTGGAT 656  
 || || ||||| || |||| ||||| ||||  
 Db 347 GCAATT-----GGTGGTGGAGC---CAAG-----  
 CAGC----- 371

Qy 657  
 GCTGTCAACAAAAGGCTCCCAGAAATAGATTCTGCTCTTCAGTTCATCTCTGAAATCATT 716  
 || || | || |||| | |  
 Db 372 -----  
 CCAAGGCAGTGTGTTGTGCTGAGCTG----- 396

Qy 717  
 CATCAGTTAACCAACCAAAAAGGCCAGCATCGTGGATGACATTCAATCCACCTTTGATGAG 776  
 || | ||||| || ||||| | || | ||| |  
 Db 397 -----CCTGCTGAAAGGCCGG-  
 ACCGTGGAGATCCTACGGGACATCAT----- 438

Qy 777 CTCCAGAAGACTTTAAATGTGCGCAAGAGTGTGCTGCTTATGGAATTGGAGGT--  
 CAACT 834  
 || | || | | || | || | ||| ||| |||  
 ||||  
 Db 439 CTGCCGCGAGTCACTTC-----CAGTATTGTG-----  
 TGGTGGTCACAACC 478

Qy 835 ATGGCCTCAAACACAAAGTCCTCCAGTCGCAGCTGGATACTC-

TGCTCCAGGGGCAGGAG 893  
 || | ||| ||| || ||| || || || || ||| |||  
 Db 479 GTGAGC-----CACGCTGTCCACC--TCACAGC-----  
 TAATCATGTCCCAGCGGC----- 522

Qy 894  
 AGCATTAAAGAGCTGCAGCAACTTCACAGCGCAGGCCCTCAACCATGGCACGGAGACCGAG 953  
 || || || | | | | || | || | ||| |  
 ||||  
 Db 523 -----GGCAGCGGC--CGAGATGGAG--GGGCAGCAGC-----  
 CGGTGTTTCGAG 562

Qy 954  
 GTCCTACTGGTGAAGAAGCAGATGAGCGAGAAGCTGAACGAGCTGGCCGACCAGGACTTC 1013  
 | |||| | |||| | || | |||| | | || | ||| |  
 |  
 Db 563 ---CAGCTGGAGGAGAAGC---TGTG-----TGAATG-  
 GATGGGCAACATGAACTAC 607

Qy 1014  
 CCCTTGACCCGCGGGAGAACGACCAGCTGGATTTTCATCGTGGAACCGAGGGGCTGAAG 1073  
 | || ||||| |  
 Db 608 AC-----GG---  
 CCGAGGTG----- 619

Qy 1074  
 AAGTCCATCCACAACCTCGGGACGATCTTAACCACCAACGCCGTTGCCTCAGAGACAGTG 1133  
 |||| || || || || || || |||| |  
 Db 620 -----TTCCATGTCC-----CGTTATTGCTTGCCC---  
 CTGTTGCTCC----- 654

Qy 1134  
 GCCACGGGCGAGGGGCTGCGGCAGACCATCATCGGGCAGCCCATGTCCGTCACCATCACC 1193  
 |||| || | | ||| || | ||| ||| ||| |||  
 ||  
 Db 655 -CCAC-----TTTGCTTGAC--TCCAGCTTT-TGCATCCCTTTTCC--  
 CACTGCTAC- 701

Qy 1194  
 ACCAAGGACAAAGACGGTGAGCTGTGCAAAACCGGCAACGCCTACCTCACCGCCGAAGT 1253  
 || |||| ||||| ||||| ||| | | |  
 Db 702 -CCCAGGA-----TGTGCA-----  
 CCTCCTTAATAG----- 726

Qy 1254  
 AGCACCCCCGACGGGAGCGTGGCAGACGGGGAGATCCTGGACAACAAGAACGGCACCTAT 1313  
 | ||||| | || | || |||| |||  
 Db 727 ---CGCCCGAC-----CGGACAAGAGGAAGCTGGG---  
 AAG----- 756

Qy 1314  
 GAGTTTTTTGTACACTGTCCAGAAGGAAGGGGACTTTACCCTGTCTCTGAGACTCTATGAC 1373  
 || | || | |||| | || | ||||  
 ||  
 Db 757 -----CCTGGGTGATGTGGAC--TCCACT-----ACGCTA--  
 AC 786

Qy 1374  
 CAGCACATCCGAGGCAGCCGTTTAAGCTGAAAGTGATCCGATCCGCTGATGTGTCTCCC 1433  
 | || || || |||| | |||| | ||



Qy 1963  
GGAAAAATAGTCACCAGGTTTGGTAGCCGAGGAAATGGGGACAGGCAGTTTGCAGGTCCCC 2022  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1167 G-----TGACACCA-----CAGCCAAAGCCCTATGGG-AAGC--  
TTTACTGAACACT 1210  
  
Qy 2023  
ATTTTGCAGCTGTAAATAGCAATAATGAGATTATTATTACAGATTTCCATAATCATTCTG 2082  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1211 A-----AGCACAAAGAGGCAGTGATG-----  
GAAGTTCGGAGACATCTAG 1250  
  
Qy 2083  
TCAAGGTGTTTAATCAGGAAGGAGAATTCATGTTGAAGTTTGGCTCAAATGGAGAAGGAA 2142  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1251 TGGAAGCG-----GCAAGCA-GAGAAAACCTG-----  
CCAATCAAGATGAGT 1291  
  
Qy 2143  
ATGGGCAGTTTAATGCTCCAACAGGTGTAGCAGTGGATTCAAATGGAAACATCATTGTGG 2202  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1292 ATGGGGAGAG-----TCACACCGGGACAGC-----TCATGT----  
CCTATATTCAGC 1334  
  
Qy 2203 CCGACTGGGGAAACAGCAGGATCCAGGTTTTTGTATGGGAGTGGATCATTTTTTG-----  
TC 2257  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1335 TCTTCAAG---AACAAC---CTCAAAGCTCT-----  
AATGAATCATTGTGGCCTCCTC 1381  
  
Qy 2258 CTACATTAAC--  
ACATCTGCTGACCCACTCTATGGCCCCCAAGGCCTGGCCCTAACTTCA 2315  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1382 CAGCTTGGACTGGCCACAGCT--CAAACGTTGAAACACCCACAGACTG--CC-----  
AA 1431  
  
Qy 2316  
GATGGTCATGTTGTGGTTGCAGACTCTGGAAATCACTGTTTCAAAGTCTATCGATACTTA 2375  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1432 GTGGGACAACCTT-----TCTGG-----CT-TTTGAAAGGC--  
TCCTTCTTCA 1470  
  
Qy 2376 CAGTAATGGTGGG-  
CAGGTGGATACCCGCTTCCATGGTCTTGCACATAAACTGGAATGG 2434  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1471 GAGCATTGGGGAGTCAG-----CAATGTCCGTTGTGTT---  
AAATCAGCTG----- 1513  
  
Qy 2435 ATTTCTCAATGCGGGACCA-  
GATTATGACTAGAGTTTTTATGCCAGAAGGAATCATTGGT 2493  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1514 ---CT-----GCCCATGATTAAGCCTG-----TAACCCAGA--  
GAACCAACGAG 1552

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Qy      2494 GA--ACTTTCCAAGGTTATTTCTGAATGTAACAATTTCT--
TAAAAATGACTTATCCAA 2549
      || || || | | | |||| | | | | | |||| |
Db      1553 GACTACAGCCCTGAGGAACTGCTGA-----
TCCTTCTCATATATATTTATTCTG 1601

Qy      2550
TTTCTGTATTTACCTTTTAGGGTTAAAAAAAACCTCTTCTACTGAATCTATAAAAACTGCA 2609
      | ||| | | | | ||| | ||| | | ||| |
|
Db      1602 TCACTGGAGAGCTC----ACGGTAGACAAAGAC-----CTGTGT-----
GAAGCAGAA 1645

Qy      2610
GTTTTACATCTGTGAACTATGGCTTAAGGGACAGGATTTATGTAGCTAAACTAATTTTGC 2669
      | | | | | | |||| | ||| | ||| | ||
Db      1646 GAAAAAGTCAAGAAAGCATTGGCT-----
CAGGTCTTCTGTGAGGAATCTGGATT--- 1695

Qy      2670
AAATCAAAACAGACACTTAAAAAAAACCTAGCATATGTAAAGGTATTCGTTAATCCTGTGAAT 2729
      | ||| | | | | ||| | ||| | ||| |
|
Db      1696 -----GTCACCT-----TTGC---TGCAAAAAATTACG-----
GACTGGGACT 1730

Qy      2730
GGTAGCTTTTGCACAGAACTTCCAAAAGCAAAACAAAAACAAAATCTATTGTAGTTATAT 2789
      | | || | || || | | |||| | |||| | | || | |
|
Db      1731 CTT--CAATTAATCTGACATTTT-----ACAAATCCAAAAT-
TGCCGTGGATGAAC 1778

Qy      2790 ACTTCATTTAACCTAGGTCACAAGACCCAGGGAATCTTCT-
AACCTCACTTTTACAGTAG 2848
      ||| | || || | | |||| | || | |||
|
Db      1779 TCTTTACTTCACTT-----
CGGGATATTGCTGGAGCTC-----G 1812

Qy      2849
GTATTACTCTTGTGACATTTTTTTTGGTTATCAACAACATAAATAAATTACTTTGGAAAA 2908
      | | ||| || ||| ||| | | | |||| || |
|||||
Db      1813 GAGT--CTCCTGAAACAGTTT-----AAGTCTGTATATGTTCC--
TGAAAA- 1854

Qy      2909 AGTAAGGCTGTCTTGCAAAATGATCCCAGC-
TCTGATTAGCAGCCCTCTGGAGTTCAGAA 2967
      || | | | || || ||| || | || || |
|
Db      1855 -----TCATACCCA-----CCAGGCATCTTATAAG----CCATTG----
TTGAAG 1891

Qy      2968 CTTAAGTATCAGTGCAAAATTTCTCAACCTTTCTGGGTTAGACAAAGATCC-
TTTTTTGTG 3026
      | |||| | | |||| | ||| || | | ||| || |
||
Db      1892 C--AAGTTGTGGAGGAAATATTTTCATCC---C---

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GAGAGGCCAGATTCCGTTGATATTG 1943

Qy 3027 TGTTCTTTTCACCA--

CCCCTTTGGCTCACCTTGTATCAGCAAACAAAGTACTTCTTCAG 3084

| | | | | | | | | | | | | | | | | | | | | |

Db 1944 AACACATGTCTTCAGGCCTCACT-GATCTCCTTAAAACTGGATTTAGCATG-  
TTCATGAA 2001

Qy 3085

GGAAACCTGAAATTTCTAATGCCTTGAAAAGCATATTACAAAAGTAATGCTACCTTTTGG 3144

| | | | | | | | | | | | | | | | | |

| |

Db 2002 GGTGAGCCG-----GCCT-----  
CATCCTAGTG- 2024

Qy 3145

GAAACAACTGCCCCGTTAACTCCAGATCATTGCACTGGAATGTAATCAAGAAAGTTAGT 3204

| | | | | | | | | | | | | | | | | |

Db 2025 -----ACTACCCC-----CTCCTGATC----  
CTC----- 2044

Qy 3205

CATGTTTTATGTACCATGTTTTACACGTGTCTCTTCTCTTCGACTTCTTGAAAGCGAAA 3264

| | | | | | | | | | | | | | | | | |

| | |

Db 2045 -----TTTGTGGTAGGTGGGGTCACA---GTCTCT-----  
GAAGTGAAAATGGTCAAA 2089

Qy 3265

GCTTTACCTCCTGCAAATGTCAGCACATGTAGTAGGACACCAGTATCCTAGGACAGAGAG 3324

| | | | | | | | | | | | | | | | | |

|

Db 2090 GAT-----CTTGTGGCATC----GTTGAAG----  
CCAGGAACCCAGGTAATCGTG 2131

Qy 3325

CCATAAGTAGCCCTTTGGAGGACTGATGGTGTCAACCAAAGGCATGTGATTGATTAATGA 3384

| | | | | | | | | | | | | | | | | |

| |

Db 2132 C-----TGTCAC-----  
ACGA 2143

Qy 3385

TTCCCCCTTAGAAAGCAAGTGTTACCAAAGTTGTGTTATCTTGAAAGCATTACAGGTAAG 3444

| | | | | | | | | | | | | | | | | |

|

Db 2144 CTCC-----TGAAGCCA-----CTT---AACATTCC-----  
TG 2168

Qy 3445

GGCATGTTATGGTTATTTATCATTGTTTAATGAATAGTAGAGGTGTCAAGGGACTATGTA 3504

| | | | | | | | | | | | | | | | | |

Db 2169 AGCT-----GTTATTTGCAACTG---ACCGACT-----GCATCCA--  
GACCTTGGC 2209

Qy 3505

TACATGATTAGGGTAAGATAGAATGTATTATATATATATATATATATACACACACACATA 3564

| | | | | | | | | | | | | | | | | |

Db 2210 TTC----TGAGCATCCGCTAAGAAG-----ATA-



Gaps 230;

Qy 17  
CTGCGGGGAGCTAAGTCCCCAGATTGGAGGAGGCTGGCTCTGGTCTTCGATGCACAGGAG 76  
|||| | ||| | | | | | | | |  
Db 2437 CTGC----AGCTCGAGCAC-----ATGTGGC---  
CTTTTTTTTTTTTTTT----- 2399

Qy 77  
TGGCCGTTATGGAACGCAGCAGCAGCGTGCAGGGTCAAAGACAGCCGGCCCCCATGTCA 136  
| | | | | | | | | | | | | | | |  
Db 2398 -----TTAAGAATCACAGCAATC-CAAGCAAAGT-----AC-----  
CTCACTGAGTAG 2357

Qy 137 GTGGTCTAGGATGGCCAGTGAAGGCA-----CCAACATCC---CAAGTCCTG--  
TGGTGC 186  
| | | | | | | | | | | | | | | |  
|  
Db 2356 GT-ATC----AAGACCC-  
TTCAGGCAGAATTCCATCATTCTCGCAATTAGTGACAGGGAC 2303

Qy 187 GCCAGATTGACAAGCAGTTTCTGAT----TTGCAGTATATGCCTGGAACGG---  
TACAAG 239  
| | | | | | | | | | | | | | | |  
||  
Db 2302 G-CTGGTTGTGGAGGAGTATTTGGAGTGGTGGCAGAAAAT---  
TGCATCGGCATTTCAG 2247

Qy 240 AATCCCAAGGTTCTCCCCTGTCTGCACACTTTCTGCGAGAGGTGC-  
CTGCAGAACTACAT 298  
| | | | | | | | | | | | | | | |  
Db 2246 CTTGAGTAGGT-----CTTATCTTC-----TTAGCG---  
GATGCTCAGAAG----- 2209

Qy 299 TCCTGCCCACAGTTTAACCCTCTCCTGCCCAGTGTGCCGCCAGAC-----  
CTCCATCCTG 353  
| | | | | | | | | | | | | | | |  
|  
Db 2208 -----CCAAGGT-----  
CTGGATGCAGTCGGTCAGTTGCAAATAACAG 2171

Qy 354 CCCGAGAAAG--GGGTGGCCGCGCTCCAGAACAATTTCTTCATCACAA--  
ACCTGATGGA 409  
| | | | | | | | | | | | | | | |  
||  
Db 2170 CTCAGGAATGTTAAGTGGC----TTCAGGAGTCGTGTGGACAGCACGATTACCTG--  
GGT 2117

Qy 410 CGTGCTGCAGCGAACTCCAGGCAGCAACGCTG----AGGAGTCTT---  
CCATCCTGGAGA 462  
| | | | | | | | | | | | | | | |  
Db 2116 -----TCCTGGCTTCAACGATGCCACAAGA-  
TCTTTGACCAT----- 2081

Qy 463  
CAGTCACTGCTGTGGCTGCGGGAAAGCCTCTCTCTTGCCCAAACCACGATGGGAATGTGA 522  
| | | | | | | | | | | | | | | |  
Db 2080 -TTTCACTTCAGAGACTG-----TGACC---  
CCAC----- 2055

Qy 523  
TGGAATTTTACTGCCAGTCTCTGTGAGACTGCCATGTGTGCGGGAGTGCACGGAGGGGGGAGC 582  
|| ||| | ||| | || |||||  
Db 2054 -----CTACCA---CAAAGAGGAT-----CA-  
GGAGGGGGT-- 2028

Qy 583  
ACGCAGAGCACCCCCACAGTTCCACTCAAGGATGTGGTGGAACAGCACAAAGCCTCGCTCC 642  
|| | | ||||| || | || | ||  
||  
Db 2027 -----AGT-----CACTAGGATGAGG-----CCGGCTCA---CCT---  
TCA 1998

Qy 643  
AGGTCCAGCTGGATGCTGTCAACAAAAGGCTCCCAGAAATAGATTCTGCTCTTCAGTTCA 702  
| | ||| || || | || | || |||||  
Db 1997 TGAACATGCTAAATCCAGTTTAAAGGAG-----  
ATCAGTGAG 1961

Qy 703 TCTCTGAAATCAT-TCATCAGTTAACCAACCAAA--  
AGGCCAGCATCGTGGATGACATTC 759  
| |||| | || | || | || | || | || |||||  
|  
Db 1960 GC-CTGAAGACATGTGTTCAAT--ATCAACGGAATCTGGCCT--CTCG-GGATGA-  
AATA 1908

Qy 760 ATTCCACCTTTGATGAGCTCCA--  
GAAGACTTTAAATGTGCGCAAGAGTGTGCTGCTTAT 817  
|||| | | ||| || | | ||| || ||| |||||  
|  
Db 1907 TTTCTCCACAACCT-TGCTTCAACAATGGCTTATAAGATGC-----  
CTGGT 1863

Qy 818  
GGAATTGGAGGTCAACTATGGCCTCAAACACAAAGTCTCCAGTCGCAGCTGGATACTCT 877  
|| || || ||| | ||| | ||  
||  
Db 1862 GGGTATG-----ATTTCCAGGAACATA-----TACAGAC-----  
TTAAACT 1827

Qy 878 GCTCCAGGGGCAGGAGAGCATTAAAGAGCTGCAGCAACTTCAC--AGCGCAG----  
GCCCT 931  
| | |||| | | ||||| ||||| || | || | || |  
|  
Db 1826 GTTTCAGGAG-----  
ACTCCGAGCTCCAGCAATATCCCGAAGTGAAGTAAAGAGTT 1776

Qy 932  
CAACCATGGCACGGAGACCGAGGTCTACTGGTGAAGAAGCAGATGAGCGAGAAGCTGAA 991  
|| ||| |||| | || | ||||| ||||| |  
||||  
Db 1775 CATCCACGGCA-----ATTTTGG-----ATTGTGAAATGTCAGAT-----  
TAATTGAA 1732

Qy 992  
CGAGCTGGCCGACCAGGACTTCCCCTTGCACCCGCGGGAGAACGACCAGCTGGATTTTCAT 1051  
||| | | || | || |||| | ||| |||||  
|  
Db 1731 -GAG-TCCAGTCCGTAATTT---TTTGCA-GCAAAGGTGACAATCCAG-----  
ATTCT 1683

Qy 1052  
 CGTGGAACCGAGGGGCTGAAGAAGTCCATCCACAACCTCGGGACGATCTTAACCACCAA 1111  
 | | | | | | | | | | | | | | | |  
 Db 1682 C-----ACAGAAGACCTGAG-----CCAATGCTT-----  
 TCTTGACTT---- 1650

Qy 1112  
 CGCCGTTGCCTCAGAGACAGTGGCCACGGGCGAGGGGCTGCGGCAGACCATCATCGGGCA 1171  
 | | | | | | | | | | | | | | | |  
 Db 1649 -----TTTCTTCTGCTTCA-----CACAGG-----  
 TCTT-----T 1625

Qy 1172 GCCCATGTCCGTACCATCACCACCAAGGACAAAGACGGTG-  
 AGCTGTGCAAAACCGGCA 1230  
 | | | | | | | | | | | | | | | |  
 | | |  
 Db 1624 GTCTA---CCGTGAGCT----  
 CTCCAGTGACAGAATAAATATATATGAGAAGGATCAGCA 1572

Qy 1231  
 ACGCCTACCTACCGCCGAAGTACACCCCCGACGGGAGCGTGGCAGACGGGGAGATCC 1290  
 | | | | | | | | | | | | | | | |  
 |  
 Db 1571 G----TTCCTCAGGGCTGTAGT-----  
 CCTCGTTGGTTCTCTGGGTTACAGG-----C 1528

Qy 1291  
 TGGACAACAAGAACGGGCACCTATGAGTTTTTGTACACTGTCCAGAAGGAAGGGGACTTTA 1350  
 | | | | | | | | | | | | | | | |  
 | |  
 Db 1527 T--TAATCATGGGCAGCAGCT----GATTT--AACAC-----  
 AACGGACATTG 1488

Qy 1351  
 CCCTGTCTCTGAGACTCTATGACCAGCACATCCGAGGCAGCCCGTTTAAGCTGAAAGTGA 1410  
 | | | | | | | | | | | | | | | |  
 Db 1487 --CTGACTC-----CCCAATGCTCTGAA-----GAAGGAGCC--TTTCA----  
 AAAG--- 1449

Qy 1411  
 TCCGATCCGCTGATGTGTCTCCACCACAGAAGGCGTGAAGAGGCGCGTTAAGTCCCCGG 1470  
 | | | | | | | | | | | | | | | |  
 |  
 Db 1448 -CCAGAAAGTTG-----TCCCAC-----TTGGC-----  
 AGTCTGT-G 1419

Qy 1471  
 GGAGCGGCCACGTCAAGCAGAAAGCTGTGAAAAGACCCGCAAGCATGTACAGCACTGGAA 1530  
 | | | | | | | | | | | | | | | |  
 | | |  
 Db 1418 GGTGTTTCAACGTT-----TGAGCTGTGGCCAGTC---CAAGCTGG-----  
 AGGAG 1376

Qy 1531  
 AACGAAAAGAGAATCCCATCGAAGACGATTTGATCTTTTCGAGTGGGTACCAAAGGAAGAA 1590  
 | | | | | | | | | | | | | | | |  
 Db 1375 GCCACAATGA-----TTC-----  
 ATTAGAGCTTT----- 1352

Qy 1591  
 ATAAAGGAGAGTTTACAAATCTTCAGGGGGTAGCTGCATCTACAAATGGAAAGATATTAA 1650  
 ||| || |||| | | |||| | | | | ||| ||  
 |  
 Db 1351 -----GAGGTT---GTTCTTGAAG----AGCTGAATAT-----  
 AGGACATGA- 1317

Qy 1651  
 TTGCAGACAGTAACAACCAATGTGTGCAGATATTTTCCAATGATGGCCAGTTCAAAAGTC 1710  
 || | | || || |||| | | |||| ||| | |  
 ||  
 Db 1316 --GCTGTC-----CCGGTGTG-----ACTCTCC-----CCA-TAC-----  
 TC 1288

Qy 1711  
 GTTTTGGCATACGGGGACGCTCTCCGGGGCAGCTGCAGCGGCCACAGGAGTGGCTGTAC 1770  
 | ||| | || |||| | |||| | | || | |  
 ||  
 Db 1287 ATCTTGATTGGCAGGTTTTCTCTGC-----  
 TTGCCGCTTCCACTAGATGTCTCCGAAC 1235

Qy 1771  
 ATCCCAGTGGGGACATAATCATTGCCGATTATGATAATAAATGGGTCAGCATTTTCTCCT 1830  
 || || |||| |||| || |||| ||| |  
 ||  
 Db 1234 TTCC-----ATCACTGCC-----TC-----  
 TTTGTGCT 1212

Qy 1831  
 CCGATGGGAAATTTAAGACAAAATTGGATCAGGAAAGCTGATGGGACCCAAAGGAGTTT 1890  
 | | |||| |||| |||| |||  
 |||  
 Db 1211 TAGT-----GTTCAGTAAAGCT-----  
 TCCCATAGGGCTTT 1181

Qy 1891 --CTGTGGACCGCAATGGGCACATTATTGTTGTGGACAACAAGGCG-  
 TGCTGCGTGTTTA 1947  
 ||||| | ||| |||| |||| | || | | | |  
 |  
 Db 1180 GGCTGTGGT-----  
 GTCACTGAATTGTGAAAGACAGCCTGGTGCAACCACATTATAA 1129

Qy 1948  
 TCTTCCAGCCAAACGGGAAATAGTCACCAGGTTTGGTAGCCGAGGAAATGGGGACAGGC 2007  
 | |||| || |||| |||| |  
 ||  
 Db 1128 TTTTCC-----TCCTCAG-----TATGGAGT---  
 GC 1106

Qy 2008  
 AGTTTGCAGGTCCCCATTTTGCAGCTGTAAATAGCAATAATGAGATTATTATTACAGATT 2067  
 ||| || |||| || |||| ||  
 |  
 Db 1105 AGTGAGC-----GCTATCAT-----  
 GTTA 1087

Qy 2068 TCCAT--  
 AATCATTCTGTCAAGGTGTTTAATCAGGAAGGAGAATTCATGTTGAAGTTTGG 2125  
 |||| ||||| ||| | |||| || |||||  
 |

Db 1086 ACCATCACATCATT-----TGTGTGGCCTGGGAG-----  
CTGGGGAAGT---G 1047

Qy 2126  
CTCAAATGGAGAAGGAAATGGGCAGTTTAATGCTCCAACAGGTGTAGCAGTGGATTCAAA 2185  
|| ||||| | | ||| | ||| | ||  
Db 1046 CT-----GAAATGATC-----TTCTCTACTA-----  
AGTTGTCTC--- 1017

Qy 2186  
TGGAAACATCATTGTGGCCGACTGGGGAAACAGCAGGATCCAGGTTTTTGTATGGGAGTGG 2245  
||| || || || | | |||||  
||  
Db 1016 -----CATGATGTCCAAC---GCTCCTGTGAGATCCAG-----  
GG 984

Qy 2246  
ATCATTTTTGTCTACATTAACACATCTGCTGACCCACTCTATGGCCCCCAAGGCCTGGC 2305  
|| |||| || || || ||| |  
||  
Db 983 TTC-----TGTCC-ACA--AAAACCACTGAT-----  
GC 959

Qy 2306  
CCTAACTTCAGATGGTCATGTTGTGGTTGCAGACTCTGGAAATCACTGTTTCAAAGTCTA 2365  
||| || || ||||| ||  
Db 958 CCTGCCTGCA-----  
GCAGTCTT----- 941

Qy 2366  
TCGATACTTACAGTAATGGTGGGCAGGTGGATAACCCGCTTCCATGGTCTTGCCTATAAA 2425  
||||| || ||||  
Db 940 -----CTTCC-  
TGTTCTT----- 929

Qy 2426  
CTGGAATGGATTTCTCAATGCGGGACCAGATTATGACTAGAGTTTTTATGCCAGAAGGAA 2485  
||| || || | | |||||  
Db 928 -----TGCAGGGGCA-----  
TAATTGGCCAGA----- 907

Qy 2486  
TCATTGGTGAACTTTCCAAGGTTATTTCTGAATGTAACAATTTCTTAAAAATGACTTAT 2545  
||| || || || || ||  
|||||  
Db 906 -----TCC-----GCAGCGATGACC-----  
TGACTTA- 885

Qy 2546  
CCAATTTCTGTATTTACCTTTAGGGTTAAAAAACTCTTCTACTGAATCTATAAAAAAC 2605  
| | |||| || |||| || || || ||  
|  
Db 884 -----AGGA---ACCTACAG-----CAAAACACTCCTCCCGTA-CT-----  
CC 851

Qy 2606  
TGCAGTTTTACATCTGTGAACTATGGCTTAAGGGACAGGATTTATGTAGCTAAACTAATT 2665  
| | || || | | |||| ||  
Db 850 TAAATGTTACA-  
CAGAGAACTGAGGC----- 825

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Qy          2666
TTGCAAATCAAACAGACACTTAAAAAACTAGCATATGTAAAGGTATTCGTTAATCCTGT 2725
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          824 -----CTGACACT-----AGGCATCTG-----
ATCT--- 804

Qy          2726
GAATGGTAGCTTTTGCACAGAACTTCCAAAAGCAAAACAAAACAAAATCTATTGTAGTT 2785
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
      | | | | |
Db          803 -----GCAGCAGCAGCTCTGGGGTT-----AGC-----
GTAGTG 775

Qy          2786 ATATACTTCATTTAACCTAGGTCACAAGACCCAGGGAATCTTCTAACCT--
CACTTTTAC 2843
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
      |
Db          774 G-----AGTCCACATCACCCAGG-----
CTTCCCAGCTTCCTCTTGTCC 736

Qy          2844
AGTAGGTATTACTCTTGTGACATTTTTTTTGGTTATCAACAATAAATATAAATTACTTTG 2903
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
      | |
Db          735 GGTCGG----GCGCT-----ATTAAGGAGGTGCACATC--CTG-----
GGGTAGCAGTG 693

Qy          2904
GAAAAAGTAAGGCTGTCTTGCAAAATGATCCCAGCTCTGATTAGCAGCCCTCTGGAGTTC 2963
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          692 GGAAAAAG---GG-----ATGCAAA-----AGCT-
GGAGTCAAGGCAAAGTGGGG--- 653

Qy          2964 AGAACTTAAGTATCAGTGCAAAATTTCTCAACCTTTCTGGGTTAGACAAAGA--
TCCTTTT 3021
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          652 -----AGCAACAGGG-----GCAAGCAATAACGG---
GACATGGAACACCTCGG 612

Qy          3022 TTGTGT-
GTTCTTTTACCACCCCTTTGGCTCACCTTGTATCAGCAAACAAAGTACTTCT 3080
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
      | |
Db          611 CCGTGTAGTTCATGTTGCCCATCCAT----TCAC-----ACAGC-----
TTCTCCT 570

Qy          3081
TCAGGGAAACCTGAAATTTCTAATGCCTTGAAAAGCATATTACAAAAGTAATGCTACCTT 3140
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          569 CCAG-----CTGC---TCGAACACC-----GGC-----
TGCTGCCCC 541

Qy          3141
TTGGGAAACAAACTGCCCCGTTAACTCCAGATCATTTGCACTGGAATGTAATCAAGAAAGT 3200
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
      |
Db          540 T-----CCATCTCGGCCGCTGCCGC-----CGCTGGGA-----
CATGA---T 507

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Qy 3201 TAGTCATGTTTTATGTACCATGTTTTACACG--  
 TGTCTCTTCTCTTCGACTTCCTGAAA 3258  
 ||| ||| || || | | | ||| ||| | | | | |||  
 ||  
 Db 506 TAG--CTGTGAGGTGGACAGCG-TGGCTCACGGTTGTGAC--  
 CACCACACAATACTGGAA 452

Qy 3259  
 GCGAAAGCTTTACCTCCTGCAAATGTCAGCACATGTAGTAGGACACCAGTATCCTAGGAC 3318  
 | || | | | | | | | | | | | | | | | |  
 |  
 Db 451 GTGA-----CTGCGGCAGATGATGTCCC-----GTAGGA-----  
 TCTCCACGGTC 412

Qy 3319  
 AGAGAGCCATAAGTAGCCCTTTGGAGGACTGATGGTGTCAACCAAAGGCATGTGATTGAT 3378  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 411 CG-----GCCTTTTCAGCAGGCAGCTCAGCACAAACACTGCCTTG-  
 GGCTGCT 366

Qy 3379  
 TAATGATTCCCCCTTAGAAAGCAAGTGTTACCAAAGTTGTGTTATCTTGAAAGCATTACA 3438  
 || ||| || | ||| ||| ||  
 Db 365 ---TGGCTCCACC-----ACCAA--  
 TTGCGT----- 345

Qy 3439  
 GGTAAGGGCATGTTATGGTTATTTATCATTGTTTAATGAATAGTAGAGGTGTCAAGGGAC 3498  
 |||| | | | | |||| || |  
 |  
 Db 344 ----CGGGCTCG-----AACTCTCGC-----AGGTGACA---  
 GTC 317

Qy 3499  
 TATGTATACATGATTAGGGTAAGATAGAATGTATTATATATATATATATATATACACACA 3558  
 ||||  
 |  
 Db 316 -----AGGG-----  
 CCC 310

Qy 3559  
 CACATATATATAGCTGAATCTTTGGTGTATTGAAATAGGCAGCACTCTGAAAGACAGAAG 3618  
 | || | | | | | | | |  
 |  
 Db 309 CCCA-----CCGC-  
 CTCCAGGAGACGGGTG 286

Qy 3619 CTTTCGTC-CAGCCACTCTTCA-  
 GCACATTCTTTACTAAGCAGTTTAAAGCCGTCCTAGT 3676  
 || | |||| | | || || | | |||| | ||||  
 ||  
 Db 285 GATC--CGCAGCCCCAGTGCAGGCTC-----TCGGCGCAG----  
 GCGGCGTCCAGGT 240

Qy 3677 GGAGCA-  
 AGCCCTAAAGCAGATTTAATTTTTGCCATTTTCCAAGAATGACGGTGGTGGCT 3735  
 | || |||| | || | || ||||  
 ||  
 Db 239 AAACCACAGCCC-----GTTTCACTTTGGCCA-----

GCA 210

Qy 3736  
TTTAGTCAGAAAATGGCCTTCTGTGCTTTCAAAAAAAAAACAAAAAAACCACACACA 3795  
| | | | | | | | | | | | | | | |

Db 209 CCTGCTC-----CCATCCTTGCT---GGGTAAAGGAC----  
AGTACGCCCCGAGGCG 166

Qy 3796 CACATAAAAAACCCAACAGGTC--  
AAAATAAAAGTTGAACTTGAGTTACATTTAATTTAA 3853  
| | | | | | | | | | | | | | | |

Db 165 CTCAT-----GGTTGGGGATTTCGCAG----  
ACTTGGGAAAC----- 134

Qy 3854  
ATATAAATGCATTTTGAAGAAATGTTAAGAACAATTTAGTCAATCGTTCATCTGTCATTGG 3913  
| | | | | | | | | | | | | | | |

Db 133 --TACGGTGC-----AGGAAC-----  
TTCTTTCAGAACTCACC GC 101

Qy 3914  
TACTGTAAAATAAGCTGTGGTCTATTTCCACTGTTTAATTTTCTACTCAGTTCTACCAA 3973  
| | | | | | | | | | | | | | | |

Db 100 TTCCGGAATTGGGCTCCGGGAGACTTTGACAG-----TCTCCACAGTAC-  
ACCCAG 50

Qy 3974  
TAGGATGTCATGTTTGACATTTTTGATAGTGACTTTGGGGTCTTCTTCACTGAAAGCACC 4033  
| | | | | | | | | | | | | | | |

Db 49 TAGGCCAAC-----AGTGC--TCGAGGAATTC--CGC----  
AGCT-T 17

Qy 4034 TTAGAACTGTACTA 4047  
| | | | | | | | | | | | | | | |  
Db 16 TTAGAGCAGAAGTA 3

RESULT 7

US-10-478-914-20

; Sequence 20, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

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; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-255226

; PRIOR FILING DATE: 2001-08-24

; NUMBER OF SEQ ID NOS: 417

; SOFTWARE: PatentIn version 3.2

; SEQ ID NO 20

; LENGTH: 2495

; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-20

Query Match 15.2%; Score 5811; DB 1; Length 2495;  
Best Local Similarity 38.0%; Pred. No. 0;  
Matches 1597; Conservative 0; Mismatches 842; Indels 1766;  
Gaps 217;

Qy 326  
CCCAGTGTGCCGCCAGACCTCCATCCTGCCCCGAGAAAGGGGTGGCCGCGCTCCAGAACAA 385  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1 CACTGTTGGCCTACTGGCTACTATCAGGATC-----  
GTGGC----- 36

Qy 386 TTTCTTCATCACAAACCTGATGGACGTGCTGCAGCGAACTCCA----  
GGCAGCAACGCTG 441  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 37 TATTTT-----GAAGAGCT-----  
GATCACCATGTTGGAAGCAGCACTG 75

Qy 442 AG----  
GAGTCTTCCATCCTGGAGACAGTCACTGCTGTGGCTGCGGGAAAGCCTCTCTCT 497  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 76 GGAATTGAGCGAGCTCACATGGGAATGTTTACTGAATTAGCTATTCTATA--  
CTCTAAAT 133

Qy 498  
TGCCCCAAACCACGATGGGAATGTGATGGAATTTTACTGCCAGTCTGTGAGACTGCCATG 557  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 134 T---TAAGCCTC---AGAAAATGAGGGA-----GC---ACCTG-GAG-  
CTGTTCTG 173

Qy 558  
TGTCGGGAGTGCACGGAGGGGGAGCACGCAGAGCACCCACAGTTCCACTCAAGGATGTG 617  
| | | | | | | | | | | | | | | | | | | | | |  
Db 174 -GTCTAGAGTGAAT-----ATTCCCAAGGT---  
GCTAAGAGCTG-- 208

Qy 618 GTGGAACAGCACAAAGGCCTCG-  
CTCCAGGTCCAGCTGGATGCTGTCAACAAAAGGCTCCC 676  
| | | | | | | | | | | | | | | | | | | | | |  
Db 209 -----CAGAACAAG--  
CTCATCTTTGGGCAGAACTGGTGTGTTTTGTATGACAAGTATGA 260

Qy 677  
AGAAATAGATTCTGCTCTTCAGTTCATCTCTGAAATCATTTCATCAGTTAACCAACCAAAA 736  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 261 AGAATATGATAATGC-CATAATTACCATGATG-  
AATCATCCAACCTGATGCCTGGAAAGAA 318

Qy 737 GGCCAGCATCGTGGATGACATTTCACCTTTGATGAGCTCCA--GAAG-  
ACTTTTAA 793  
| | | | | | | | | | | | | | | | | | | | | |  
Db 319 GGGCA-ATTCAAAGATATCATT-----ACCAAGGTTG----  
CCAATGTGGAACCTATACT 367

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Qy          794
TGTGCGCAAGAGTGTGCTGCTTATGGAATTGGAGGTCAACTATGGCCTCAAACACAAAGT 853
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          368 ACAGAGCAATACAGTTCTACTTA--GAAT-----TCAA-----
GCCTCTGTTGTTAAAT 414

Qy          854
CCTCCAGTCGCGAGCTGGATACTCTGCTCCAGGGGCGAGGAGCATTAAGAGCTGCAGCAA 913
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          415 GAT-----TTGCTGATGG-TGCTGT-CTCCACGG-----
TTGGA----- 446

Qy          914 CTTACAGCGCAGGCCCTCAACCAT---
GGCACGGAGACCGAGGTCCTACTGGTGAAGAA 970
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          447 --TCACA-
CTCGTGCAGTCAATTATTTTCAGCAAGGTTAAACAGCTACCACTGGTGAAACC 503

Qy          971
GCAGATGAGCGAGAAGCTGAACGAGCTGGCCGACCAGGACTTCCCTTGCACCCGCGGGA 1030
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          504 GTATTTG-----CGTTCAG---TTC-----
AGAACC-----A 527

Qy          1031
GAACGACCAGCTGGATTTTCATCGTGAAACCGAGGGGCTGAAGAAGTCCATCCACAACCT 1090
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| |
Db          528 TAACAACAA-----ATC-TG-----
TGAATGAATCATTGAACAATCT 563

Qy          1091
CGGGACGATCTTAACCACCAACGCCGTTGCCTCAGAGACAGTGGCCACGGGCGAGGGGCT 1150
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          564 -----
TTTTAT-----T 570

Qy          1151
GCGGCAGACCATCATCGGGCAGCCCATGTCCGTCACCATCACCACCAAGGACAAAGACGG 1210
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          571 ACAGAAGAAGATTATCAGGC-----TCTGCGAACATCA-----
ATAGATGC 611

Qy          1211 TGAGCTGTG-
CAAAACCGGCAACGCCTACCTCACCGCCGAAGTGAAGACACCCCGACGGGA 1269
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          612 T---TATGACAACTTTGACAA---TATCTCGCT-----
TGCTC-----A 644

Qy          1270 GCGTGGCAGACGGGGGAGATCCTGG-
ACAAACAAGAACGGCACCTATGAGTTTTTGTACACT 1328
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          645 GCGT-----TTGGAACAAACATGAAC-----
TCATTGAGTT----- 674

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Qy 1329 GTCCAGAAGGAAGGGGACTTTAC--  
CCTGTCTCTGAGACTCTATGACCAGCACATCCGAG 1386  
||| || | || | | |||| |

Db 675 ---CAGGAGAA-----TTGCTGCTTATCTCT-----  
TCAAAG 703

Qy 1387  
GCAGCCCGTTTAAGCTGAAAGTGATCCGATCCGCTGATGTGTCTCCCACCACAGAAGGCG 1446  
||| | | |||| | ||||

Db 704 GCAAC-----AATCGCTG-----  
GAAACAGA---G 725

Qy 1447  
TGAAGAGGCGCGTTAAGTCCCCGGGGAGCGGCCACGTCAAGCAGAAAGCTGTGAAAAGAC 1506  
|| |||| || | | | || | || | || |

Db 726 TGTAGAG-----CTGTGCAAGAAAGACAGCCTTTACA---  
AGGATGCAATG----- 768

Qy 1507  
CCGCAAGCATGTACAGCACTGGAAAACGAAAAGAGAATCCCATCGAAGACGATTTGATCT 1566  
| | | | | | | | | | | | | | |

Db 769 CAGTATGCTTCTGAATCTAAAGATACTGAATTG-----GCTGAAGA---  
ACTCC 814

Qy 1567  
TTCGAGTGGGTACCAAAGGAAGAAATAAAGGAGAGTTTACAAATCTTCAGGGGGTAGCTG 1626  
| | |||| | |||| || | || | || | |

Db 815 TGC-AGTGGTTTTTGCAGGAAGAAAAAGAGAGTG-----  
CTTTGGAGCTTGCTG 864

Qy 1627  
CATCTACAAATGGAAAGATATTAATTGCAGACAGTAACAACCAATGTGTGCAGATATTTT 1686  
| || | || || | || ||

Db 865 --TTTAC-----CTGTTAC-----  
GATCTTTT 884

Qy 1687 CCAATGATGGCCAGTTCAAAAGTCGTTTTGGCA--TACGGGGACGCTCTC---  
CGGGGCA 1741  
| |||| | |||| | | | | | || | | |

Db 885 -----AAGGCCAGAT-----  
GTCGTCTTAGAACTGCATGGAGGCACAATATCATGGAT 933

Qy 1742  
GCTGCAGCGGCCCACAGGAGTGGCTGTACATCCCAGTGGGGACATAATCATTGCCGATTA 1801  
||| |||| | |||| | | | | | || |

Db 934 TTTGCCAT-GCCCTAT-----  
TTCATCCAGGTCATGAAGGAGTACTTGACAAAG 982

Qy 1802 TG---  
ATAATAAATGGGTCAGCATTCTCTCCTCCGATGGGAAATTTAAGACAAAAATTGG 1858  
|| | | || || || || | | | || | ||

Db 983 TGGATAAATTAGATGCTTCAGAAT-----CAC-----  
TGAGAAAAGAAGAAG 1024

Qy 1859  
ATCAGGAAAGCTGATGGGACCCAAAGGAGTTTCTGTGGACCGCAATGGGCACATTATTGT 1918  
| | | | | | | | | | | | | | | | | |  
| | |  
Db 1025 AAC----AAGCTACAGAGACACAACCCATTGTTTATGGTCAGC-----CCCA--  
GTTGA 1072

Qy 1919 TGTGGACAACAAGGC---  
GTGCTGCGTGTTTATCTTCCAGCCAAACGGGAAAATAGTCAC 1975  
| | | | | | | | | | | | | | | | | |  
| | |  
Db 1073 TGCTGACAGCAGGACCCAGTGTTC-----CGTCCCTCC--CCAGG-----  
CAC 1114

Qy 1976  
CAGGTTTGGTAGCCGAGGAAATGGGGACAGGCAGTTTGCAGGTCCCCATTTTGCAGCTGT 2035  
| | | | | | | | | | | | | | | | | |  
Db 1115 CT--TTTGGT-----TATGG-----  
TTATACCGCACCACCGTATG----- 1147

Qy 2036  
AAATAGCAATAATGAGATTATTATTACAGATTTCCATAATCATTCTGTCAAGGTGTTTAA 2095  
| | | | | | | | | | | | | | | | | |  
Db 1148 -----GACAG---CCA----  
CAGCCTGGCTTTGGGT---- 1171

Qy 2096  
TCAGGAAGGAGAATTTCATGTTGAAGTTTGGCTCAAATGGAGAAGGAAATGGGCAGTTTAA 2155  
| | | | | | | | | | | | | | | | | |  
Db 1172 ACAG-----CATGT-----GAGATG---  
AAGCGC----- 1192

Qy 2156 TGCTCCAACAGGTGTAG-CA-  
GTGGATTCAAATGGAAACATCATTGTGGCCGACTGGGGA 2213  
| | | | | | | | | | | | | | | | | |  
Db 1193 TGATCC-----  
TGTAGTCACCTATTTTCGTACTGAAACATCGTCTTTACCCACT----- 1241

Qy 2214  
AACAGCAGGATCCAGGTTTTTGATGGGAGTGGATCATTTTTGTCTACATTAACACATCT 2273  
| | | | | | | | | | | | | | | | | |  
Db 1242 -----TCTCAGTTTATAATGGGG-----  
AAAACA--- 1266

Qy 2274 GCTGACCCACTCTATGGCCCCCAAGGCCTG--GCCCTAACTTCA-  
GATGGTCATGTTGTG 2330  
| | | | | | | | | | | | | | | | | |  
|  
Db 1267 -----  
GGCAACGTGTTCTTGTAACCTTTATTTTCATGAAGGACTTCTTTT- 1310

Qy 2331  
GTTGCAGACTCTGGAAATCACTGTTTCAAAGTCTATCGATACTTACAGTAATGGTGGGCA 2390  
| | | | | | | | | | | | | | | | | |  
Db 1311 -----TGTTTCTAA--CTAT--  
AAACT----- 1328

Qy 2391  
GGTGGATACCCGCTTCCATGGTCTTGCACTATAAACTGGAATGGATTTCTCAATGCGGGA 2450

Db            1329 --TGATCACCTAT-----GT-----TAAACCT-----  
TATTTCACATT----- 1361

Qy            2451  
CCAGATTATGACTAGAGTTTTTTATGCCAGAAGGAATCATTGGTGAAC TTTCCAAGGTTAT 2510  
             ||| || | |     |||| ||| | | |     |||     | ||| | | | |

Db            1362 CCACATCAT-TTTAGAATTTATTTTC--GAAGG-----  
GGAATAGTTTCAATGTTTTA 1411

Qy            2511  
TTCTGAATGTAACAATTTCTCTTAAAAATGACTTATCCAATTTCTGTATTTACCTTTTAGG 2570  
             |||                      |||          | ||| |          ||||          ||| ||

Db            1412 TTC-----ACTTG----GGCTTTT---TTTC-----  
TTCCCC----- 1436

Qy            2571 GTTAAAAAAAAACTCTTCTACTGAATCTATAAA-AACTG--  
CAGTTTTTACATCTGTGAACT 2627  
                                 |||||                ||| |||| |||||     || | ||     ||||| |

Db            1437 -----CTCTT-----  
TCTTTAAAGAACTGCTCAATATTCAATCTGT----- 1472

Qy            2628  
ATGGCTTAAGGGACAGGATTTTATGTAGCTAAACTAATTTTGC AAATCAAACAGACACTTA 2687  
             ||    | | | ||     |||||                ||    |||                || |                | ||| ||

|

Db            1473 -TG---TGAAGAACCTGATTT-----GC---ACTC-----  
TGTAGTGTTTAAAGAAAC--A 1514

Qy            2688  
AAAAAACTAGCATATGTAAAGGTATTCGTTAATCCTGTGAATGGTAGCTTTTGCACAGAA 2747  
             || |||||     ||||                |    || | || |     || ||||     |     ||||

Db            1515 AAGAAACTCTAATAT----TGAATCTCTTAAATTTAGTGTATG-----  
TAAACAG-- 1560

Qy            2748  
CTTCCAAAAGCAAAACAAAAACAAAATCTATTGTAGTTATATACTTCATTTAACCTAGGT 2807  
             ||| |||| |                                      |||||     || ||     ||||| |

Db            1561 CTTACAAATACG-----TATTGTC--TAAATG---  
CATTTA----- 1591

Qy            2808  
CACAAAGACCCAGGGAATCTTCTAACCTCACTTTTACAGTAGGTATTACTCTTGTGACATT 2867  
                                 ||||| |                      || | || | | |     ||     |

Db            1592 -----AATCTGTT-----TTATTCA--  
AAGAAAAGCTAAAG----- 1620

Qy            2868  
TTTTTGTTTATCAACA ACTAAATATAAAATTACTTTGGAAAAAGTAAGGCTGTCTTGCAA 2927  
                                 ||| |||                      | | | | ||     | | ||| |||||

|

Db            1621 -----CAAAAAC-----  
ACTGCGATATGACCATGCAAGACTGTC-----A 1655

Qy            2928  
ATGATCCCAGCTCTGATTAGCAGCCCTCTGGAGTTCAGAACTTAAGTATCAGTGCAAATT 2987  
             ||     ||| |     ||     || | ||                |||| ||                ||| || ||

Db            1656 GTG---CCAACAAAGA----CAACACT-----AATCAGCAC-----ATC-  
GTACA----- 1692

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Qy          2988
TCTCAACCTTTCTGGGTTAGACAAAGATCCTTTTTTTGTGTGTTCTTTTACCACCCCTTT 3047
      ||| | || | | | |
||
Db          1693 -----CTGGATT--GCAGTGCTTC-----
CCAGATTATT 1719

Qy          3048
GGCTCACCTTGTATCAGCAAACAAAGTACTTCTTCAGGGAAACCTGAAATTTCTAATGCC 3107
      | | | | | | | | | | | | | |
Db          1720 G---AAAAATGTTACAG-----ACAACCT-----GCCTGATTTTT-
AAATG-- 1756

Qy          3108
TTGAAAAGCATATTACAAAAGTAATGCTACCTTTTGGGAAACAACTGCCCGTTAACTC 3167
      ||| | | | | | | | | | | | | |
Db          1757 -----AGCGT-----AAAAGGCCCTCTAACCTATG-----
CAGGTTTCCCATTATTA---- 1796

Qy          3168 CAGATCATTGCACTGGAATGTAATCAAGAAAGTTAGTCATGTTTTATGTAC--
CATGTTT 3225
      ||| | | | | | | | | | | | | |
|
Db          1797 -----TGCA-----TATAGAAAATGCTAGT-ATGTTTTGCTCACTTCAT-
ATG 1837

Qy          3226 TCACACGTGTCTCTTCTCTTCGACT---
TCCTGAAAGCGAAAGCTTTACCTCCTGCAAAT 3282
      | | | | | | | | | | | | | |
Db          1838 TAACAGGTG-CCCTTATGTTGTGCTGTATCCTG-----
TGCTTTTTTCT----- 1879

Qy          3283
GTCAGCACATGTAGTAGGACACCAGTATCCTAGGACAGAGAGCCATAAGTAGCCCTTTGG 3342
      || | | | | | | | | | | | |
Db          1880 -----
GTGGGACCAATCCATTCAGGAGCAAAGAGC----- 1909

Qy          3343
AGGACTGATGGTGTCAACCAAAGGCATGTGATTGATTAATGATTCCCCCTTAGAAAGCAA 3402
      ||| | | | | | | | | | | |
Db          1910 -----ACC-----ATGATTCC-----
AATCTT 1926

Qy          3403 GTGTTACCAAAGTTGTGTTATCTTGAAAGCATTAC---
AGGTAAGGGCATGTTATGGTTA 3459
      ||| | | | | | | | | | | |
||
Db          1927 GTG-----TGTGTTTACT---AACCCCTCCCTGAGGTTTGTGTATGT--
TGGATA 1971

Qy          3460 TTTATCATTGTTTAATGAATAGTAGAGGTGTCAAGGG--
ACTATGTATACATGATTAGGG 3517
      || | | | | | | | | | | |
Db          1972 TT-----
GTGGTGTTTTAGATCACTGAGTGTACA----- 2000

Qy          3518
TAAGATAGAATGTATTATATATATATATATATACACACACACATATATATAGCTGAAT 3577
      ||| | | | | | | | | | | |

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Db 2001 GAAGAGAGAA-----ATTCAAACA-----  
AAATATTGCTGT-- 2031

Qy 3578  
CTTTGGTGTATTGAAATAGGCAGCACTCTGAAAGACAGAAGCTTCGTCCAGCCACTCTTC 3637

|||||  
Db 2032 -----  
TCTTC 2036

Qy 3638  
AGCACATTCCTTTACTAAGCAGTTTAAAGCCGTCCTAGTGGAGCAAGCCCTAAAGCAGAT 3697  
|| ||| |||| | | |

||  
Db 2037 AG-----TTT-----TGTTT-----  
GTGGAATTTGAAATTACTCAAAT 2069

Qy 3698  
TTAATTTTTGCCATTTTTCCAAGAATGACGGTGGTGGCTTTTAGTCAGAAAATGGCCTTCT 3757  
||| | | || | || | ||| | | || | || |  
Db 2070 TTAAAAT-----AAATTACTGGACT-----GTGGAAATAA--  
CATAGAATTG----- 2109

Qy 3758  
GTGCTTTTCAAAAAAAAAACAAAAAAAAACCACACACACACATAAAAAACCCAACAGGTC 3817  
| ||| || ||| |||| | ||  
Db 2110 AAGTTTT-----  
AATTAAATACCACTCAAACG----- 2136

Qy 3818 AAAATAAAAGTTGAACTTGAGTTACATTTAATTTAAATATAAATGCATTT-  
TGAGAAATG 3876  
||| || || | ||| || ||| | |||| |||  
|||  
Db 2137 AAAAGAACAGTAGTTTTTG---  
TAGTTTTATATTGGATACTGAGGCATTAGGGAGGCATG 2193

Qy 3877  
TTAAGAACAATTTAGTCAATCGTTCATCTGTCATTGGTACTGTAAAATAAGCTGTGGTCT 3936  
| ||| | ||| ||  
Db 2194 AAAGGAA-----  
GAGGAATGAG----- 2210

Qy 3937 ATTTCCACTGTTTAATTTTCTACTCAGTTCTACCAAATAGGATGTCATGT-  
TTGACATTT 3995  
| || | | |||||  
|||||  
Db 2211 -----GATTGA-----  
GACATGTGAAGACATTG 2233

Qy 3996  
TTGATAGTGACTTTGGGGTCTTCTTCACTGAAAGCACCTTAGAACTGTACTATAAGAAAA 4055  
| || | | || | || || | ||| | |||  
Db 2234 TGCATTATATCAATGTG-----CATTCTG-  
TAGTTCATTAACAAGGTAC----- 2277

Qy 4056  
CATTTCCCCTATGTATAATTATATGAATGTGATGTTTATTGCTTATTAATTTATAATTC- 4114  
||| | || | || |  
|  
Db 2278 -----ATGC--

AATAGTCTAAAGAACC 2297

Qy 4115 --  
AGTCATTCTCTATATAGGACTTCTTAAATTTAGAAGGGAAATCTAGCTACTTCAAAT 4172  
|||| | |||| | || |||| |||| || ||  
Db 2298 AGAGTCACT-ACTATAGTGG----CTTAACATTT-----  
AATCTGTCTCC----- 2337

Qy 4173  
TGTCTGTTAAATTTATTATGCCCAAATCAACCTCTGAAAAAGGTTTTTCCAGGAAGATT 4232  
||| | ||| | | | ||||| ||||  
|  
Db 2338 -----AATATTTTAACCAAGT-GACACCGG-----GGTTTTTATC-  
GAAGCAT 2378

Qy 4233  
TACATTTAGGTTTAATATTTTTTTAGTTAGGTAGAGTTTTAAAAATACTTGAGCCTGTC 4292  
| || | || ||||  
||  
Db 2379 TTCCT-----  
TAAATGAACAAATC 2398

Qy 4293  
CGTGATAAAGCTATAAAATTCAATAACTTTTTAGAATGTTAAATGAAGACACTGTTTCCT 4352  
| ||| | || ||||  
Db 2399 -----ATGGCTGTTATAT----  
TAACT----- 2416

Qy 4353  
AACATCAGTGAGATACATCTTTGAATTTAAACATTCATATTTACTGAGTACCTACTAGGT 4412  
||| ||| | | ||||| ||| | | | |  
|||  
Db 2417 -----TGAAATAAA---ATATATTTAAA----  
CATGTAAAAAAAAAAAAAAAAAGGC 2461

Qy 4413  
ACCAAGTACTCTTTTAGGCACTGGAAATACAGTGATGGACAAAACAGGTAAAAAATCGCT 4472  
|| || || | ||| ||||  
||||  
Db 2462 CACATGTGCTC-----GAGCTG-----CAGG-----  
TCGCG 2487

Qy 4473 GCCCC 4477  
||| |  
Db 2488 GCCGC 2492

# RESULT 8

US-10-478-914-20/c  
; Sequence 20, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775

; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 20  
; LENGTH: 2495  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-20

Query Match 14.9%; Score 5722; DB 1; Length 2495;  
Best Local Similarity 36.9%; Pred. No. 0;  
Matches 1615; Conservative 0; Mismatches 844; Indels 1920;  
Gaps 220;

Qy 1949 CTTCCAGCCAAACGGGAAAATAGTCACCAGGTTTGGTAGC-  
CGAGGAAATGGGGACAGGC 2007  
|| | ||| || || | ||| |||| | ||| ||  
Db 2495 CTAGCGGCC--GCG-----ACCT-----  
GCAGCTCGAGCACATGTGG----- 2461

Qy 2008  
AGTTTGCAGGTCCCCATTTTGCAGCTGTAAATAGCAATAATGAGATTATTATTACAGATT 2067  
|| |||| | | || |||||  
||  
Db 2460 -----CCTTTTT-----TTTT-----  
TTTTTTTTTACATGTT 2435

Qy 2068  
TCCATAATCATTCTGTCAAGGTGTTTAATCAGGAAGGAGAATTCATGTTGAAGTTTGGCT 2127  
| ||| || | |||| | | | ||| ||| | |||  
|  
Db 2434 TAAATATATTTTATTTCAAGTTAATATAACAG-----CCAT-----  
GATTTGTT 2391

Qy 2128 CAAATGGAGAAG-  
GAAATGGGCAGTTTAATGCTCCAACAGGTGTAGCAGTGGATTCAAAT 2186  
|| | ||| ||||| | | || | || |||| |||  
|  
Db 2390 CATTT----AAGTGAAATGCTTCGATAAAAACCCC----GGTG-----  
TCACTT 2350

Qy 2187  
GGAAACATCATTGTGGCCGACTGGGGAAACAGCAGGATCCAGGTTTTTGTATGGGAGTGGA 2246  
|| | | ||| ||| ||||  
Db 2349 GGTAAAAATATT-----  
GGAGACAG----- 2330

Qy 2247  
TCATTTTTGTCTACATTAACACATCTGCTGACCCACTCTATGGCCCCCAAGGCCTGGCC 2306  
|||| || | | |||| ||  
Db 2329 -----ATTAA-----  
ATGTTAAGCCACTATA----- 2309

Qy 2307  
CTAACTTCAGATGGTCATGTTGTGGTTGCAGACTCTGGAAATCACTGTTTCAAAGTCTAT 2366  
|| || ||||| |||  
|  
Db 2308 -----GTAGT-----GACTCTGGT-----

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Qy          2367
CGATACTTACAGTAATGGTGGGCAGGTGGATACCCGCTTCCATGGTCTTGCACTATAAAC 2426
      ||      || ||      ||      | || || | || ||
||
Db          2289 AGACTATTGCA-----TG-----TACCTTGTTAATGAACT-----
AC 2258

Qy          2427
TGGAATGGATTTCTCAATGCGGGACCAGATTATGACTAGAGTTTTTATGCCAGAAGGAAT 2486
      |||||      | || |      | | | |||
Db          2257 AGGAATG-----CACATT-----
GATATAATGC----- 2235

Qy          2487 CATTGGTGAACCTTTCCAAGGTTATTTCTGAATGTAACAATTTCTTAAAAATGACT-
TAT 2545
                        |||| | | | || |
||
Db          2234 -----ACAATGTC--
TTCACATGTCTCAAT 2212

Qy          2546
CCAATTTCTGTATTTACCTTTAGGGTTAAAAAACTCTTCTACTGAATCTATAAAAAC 2605
      ||      |||      |||||      || | |
|
Db          2211 CCTCATTC-----CTCTTC-----
CTTTCATGCC 2188

Qy          2606
TGCAGTTTTACATCTGTGAACTATGGCTTAAGGGACAGGATTTATGTAGCTAACTAATT 2665
      | |      ||| || |      ||| ||      |
|||
Db          2187 TCC-----CTAATGCCT-----CAGTAT-----
CCAAT- 2165

Qy          2666
TTGCAAATCAAACAGACACTTAAAAAACTAGCATATGTAAAGGTATTCGTTAATCCTGT 2725
      || ||||      || ||||| |||      | |||||
|
Db          2164 -----ATAAAAC-----TACAAAAACTA----CTGTTC---
TTTTTCGTT-----T 2132

Qy          2726
GAATGGTAGCTTTTGCACAGAACTTCCAAAAGCAAAACAAAACAAAATCTATTGTAGTT 2785
      || ||||| |||      | |||||      || |||||
|||
Db          2131 GAGTGGTA---TTTAATTAAACTTC-----AATTCTAT-----
GTT 2098

Qy          2786
ATATACTTCATTTAACCTAGGTCACAAGACCCAGGGAATCTTCTAACCTCACTTTTACAG 2845
      || |      ||      |||
|||
Db          2097 ATTT-----CCACAGTC-----
CAG 2083

Qy          2846
TAGGTATTACTCTTGTGACATTTTTTTGGTTATCAACAATAAATAAATTACTTTTGA 2905
      ||      |||| |||      | | ||||

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Db 2082 TA-----ATTTATTT-----  
TAAATTTG-- 2065

Qy 2906 AAAAGTAAGGCTGTCTTGCAAATGATC--  
CCAGCTCTGATTAGCAGCCCTCTGGAGTTC 2963  
|||| | | | | | | | | | |  
|||

Db 2064 ---AGTAA-----  
TTTCAAATTCCACAAACAAACTGAAGAACAGCAATATTTTGTT- 2016

Qy 2964  
AGAACTTAAGTATCAGTGCAAATTTCTCAACCTTTCTGGGTTAGACAAAGATCCTTTTTT 3023  
| | | | | | | | | | | | | |  
Db 2015 -----TG--AATTTCTCTC---TTCTG---TACAC-----  
TC----- 1992

Qy 3024  
GTGTGTTCTTTTACCACCCCTTTGGCTCACCTTGATCAGCAAACAAAGTACTTCTTCA 3083  
| | | | | | | | | | | | | |  
|||  
Db 1991 -AGTGATC--TAAACACCACAATATC-----CAACATACACAAACC----  
TCA 1950

Qy 3084  
GGGAAACCTGAAATTTCTAATGCCTTGAAAAGCATATTACAAAAGTAATGCTACCTTTTG 3143  
||||  
|  
Db 1949  
GGGAA-----G 1944

Qy 3144  
GGAAACAAACTGCCCCGTTAACTCCAGATCATTGCACTGGAATGTAATCAAGAAAGTTAG 3203  
| | | | | | | | | | | | | |  
Db 1943 GGTTA-----GTAAACAC-----  
ACACAAGATTGGAATCATG----- 1912

Qy 3204  
TCATGTTTTATGTACCATGTTTTACACGTGTCTCTTCTCTTCGACTTCCTGAAAGCGAA 3263  
| | | | | | | | | | | | | |  
|||  
Db 1911 -----GTG-CTCTTTGC-----TCCTGAATG-  
GAA 1889

Qy 3264  
AGCTTTACCTCCTGCAAATGTCAGCACATGTAGTAGGACACCAGTATCCTAGGACAGAGA 3323  
| | | | | | | | | | | | | |  
Db 1888 TGGT---CCACAGAAAA---AGCAC-----  
AGGATAC----- 1862

Qy 3324  
GCCATAAGTAGCCCTTTGGAGGACTGATGGTGTCAACCAAAGGCATGTGATTGATTAATG 3383  
| | | | | | | | | | | | | |  
Db 1861 -----AGC-----  
ACAACATAAGG----- 1848

Qy 3384  
ATTCCCCCTTAGAAAGCAAGTGTTACCAAAGTTGTGTTATCTTGAAAGCATTACAGGTAA 3443  
| | | | | | | | | | | | | |  
||  
Db 1847 -----GCACCTGTTACATATGAAGTG-----AGCAAAACA--

TAC 1815

Qy 3444  
GGGCATGTTATGGTTATTTTATCATTGTTTAAATAGTAGAGGTGTCAAGGGACTATGT 3503  
|||| | | | |  
Db 1814 TAGCAT-----TTTCTATATGCATAATG-----  
GGG----- 1789

Qy 3504  
ATACATGATTAGGGTAAGATAGAATGTATTATATATATATATATATATACACACACACAT 3563  
| | | | | | | | | |  
|||  
Db 1788 AAACCTGCATAG-----GTTAGAGGGCCTTTT-----  
ACGCTCAT 1754

Qy 3564  
ATATATAGCTGAATCTTTGGTGTATTGAAATAGGCAGCACTCTGAAAGACAGAAGCTTCG 3623  
| | | | | | | | | | | | | | | |  
|  
Db 1753 TTAAAAATCAGGCAAGTT-GTCTGTAACATTTTTCAATAATCTG-----GGAAGC-  
ACT 1702

Qy 3624  
TCCAGCCACTCTTCAGCACATTCTTTACTAAGCAGTTTAAAGCCGTCCTAGTGGAGCAA 3683  
| | | | | | | | | | | | | | | |  
Db 1701 GCAATCCAGTGTAC-----  
GATGTGCTGATTAGTGTTGTCTTTGTTG----- 1660

Qy 3684  
GCCCTAAAGCAGATTTAATTTTTGCCATTTTCCAAGAATGACGGTGGTGGCTTTTAGTCA 3743  
| | | | | | | | | | | | | | | |  
Db 1659 GCACTGA--CAG-----TCTTG-CATGGTC---ATATGCCAGTG-----  
TTTTT---- 1622

Qy 3744 GAAATGGCCTT--  
CTGTGCTTTCAAAAAAAAAAACAACCAACACACACACATA 3801  
| | | | | | | | | | | | | | | |  
|||  
Db 1621 -----GCTTTAGCTTTTCTTT---GAATAAACAGATTTAAAT-----  
GCATT 1582

Qy 3802  
AAAAACCCAACAGGTCAAAATAAAAGTTGAACCTGAGTTACATTTAATTTAAATATAAAT 3861  
| | | | | | | | | | | | | | | |  
||  
Db 1581 TAGA---CAATACGT--ATTTGTAAGCTG---TTTACATACACTAAATTTAAG---  
AGAT 1533

Qy 3862  
GCATTTTGAGAAATGTTAAGAACAATTTAGTCAATCGTTCATCTGTCATTGGTACTGTAA 3921  
| | | | | | | | | | | | | | | |  
|||  
Db 1532 TCAATATTAGA-----GTT-----  
TCTTTGTTTCTTTAA 1504

Qy 3922  
AATAAGCTGTGGTCTATTTCCACTGTTTAATTTTCTACTCAGTTCTACCAAATAGGATGT 3981  
| | | | | | | | | | | | | | | |  
|  
Db 1503 ACACTACAGAGTGCAAT----CAG-----GTTCTTCAC-----

AACAGATTGAATAT 1460

Qy 3982  
CATGTTTGACATTTTTTGATAGTGACTTTGGGGTCTTCTTCACTGAAAGCACCTTAGAACT 4041  
| | | | | | | | | | | | | | | | | |  
Db 1459 TGAGCAGTTCTTTAAAGAAAGAG-----GGGGAAG-----  
AAAAAAGCCCAAGTGAATA 1410

Qy 4042  
GTACTATAAGAAAACATTTCCCTATGTATAATTATATGAATGTGATGTTTATTGCTTAT 4101  
| | | | | | | | | | | | | | | | | |  
|  
Db 1409 AAACATT---  
GAACTATTCCCTTCGAAAATAAATTCTAAATGATGTGGAATGTGAAA 1353

Qy 4102  
TAATTTATAATTCAGTCATTCTCTATATAGGACTTCTTAAAATTTAGAAGGGAAATCTAG 4161  
| | | | | | | | | | | | | | | | | |  
Db 1352 TA-----AGG---TTTTAACAT-----  
AGGTGATC--- 1331

Qy 4162  
CTACTTCAAATTGTCTGTAAATTTATTATGCCCAAATCAACCTCTGAAAAAGGTTTTT 4221  
| | | | | | | | | | | | | | | | | |  
| |  
Db 1330 -----CAAGTTTATAGTTAGA-----AAC-----  
AAAAAGAAGTCCTT 1298

Qy 4222  
CCAGGAAGATTTACATTTAGGTTTAATATTTTTTTAGTTAGGTAGAGTTTTAAAAAATAC 4281  
| | | | | | | | | | | | | | | | | |  
| |  
Db 1297 CATGAAA-----  
TAAAGGTTACAAGAACAC 1273

Qy 4282  
TTGAGCCTGTCCGTGATAAAGCTATAAAATTCAATAACTTTTTAGAAATGTTAAATG---- 4337  
| | | | | | | | | | | | | | | | | |  
Db 1272 GT-TGCCTGT-----TTTCC--  
CCCATTATAAACTGAGAAGTGGTA 1234

Qy 4338  
AAGACACTGTTTCCTAACATCAGTGAGATACATCTTTGAATTTAAACATTCATATTTACT 4397  
| | | | | | | | | | | | | | | | | |  
|  
Db 1233 AAGACGATGTTTCAGTACGAAAATAGGTGACTAC--AGGATCAGCGC-  
TTCATCTCACAT 1177

Qy 4398 G-  
AGTACCTACTAGGTACCAAGTACTCTTTTAGGCACTGGAAATACAGTGATGGACAAAA 4456  
| | | | | | | | | | | | | | | | | |  
Db 1176 GCTGTACC--CAAAG--CCAGG---CTGT--GG--  
CTGTCCATACGGTGGTG----- 1136

Qy 4457  
CAGGTAAAAATCGCTGCCCCCTCAGAGCTGACATTCTGGGGTGGGAATTTTCAATTTTGCC 4516  
| | | | | | | | | | | | | | | | | |  
| |  
Db 1135 -CGGTATAA---CCATAACCAAAGGTGC-----CTGGGGAGGGA----CG----  
GCA 1095

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Qy          4517
ACGTACTAACGTTCTGCACAAAAGACAGGCTAGACTCTTGTCTAGATTGTTTAAAAGAAA 4576
      ||  |||  ||  ||||  |  |||  |  |||
Db          1094 AC--ACTGG-GTCCTGC-----TGTCAGCATCAACT-----
GGGG 1063

Qy          4577
CTTTTCAAATTGGTTACATTAATTTTAGTTTATTTTCACAAGTAAAAATGGCTTTTTTATT 4636
      ||  ||  |  |||  |  ||  ||  |  |  |||  ||
||
Db          1062 CTGACCATA-----AACAAATGGGTTGTGTCTCT-----
GTAGCTTGTTCCT 1022

Qy          4637
TAGATTCTTTCTGTCCCAGGCTGTTGATCTTAAACTAGTTGATTTAAAGAGTTTTTTTTTG 4696
      |||||  ||  |||  ||||  |  ||  |  ||  |||  |||
|
Db          1021 ---CTTCTTT---TCTCAG-----TGATTCTGAAGC-----ATCTAA-----
TTTATC 985

Qy          4697
CACAAACATTTCAATTATATTTGTGAACTTAGAAATTAAGTTACAATCTAACCAGCCATCA 4756
      |||  |||  |  |  |||  ||
|||
Db          984 CAC-----CTTTGTCAAGTACT-----
CCTTCA 962

Qy          4757 TATCAT--ATCCTATCAGGC-
TAGATATCTCAATAGTAGACTGAATACAAAGCTAATTTT 4813
      |  |  |  ||  ||  |||  |  |  ||  ||  ||  ||  ||  ||  ||
Db          961 TGACCTGGATGAAATAGGGCATGGCAAAATCCATGATATTGTGCCT-
CCATGCAG----- 908

Qy          4814 TTTTACATGTCAATAT-TGGCACAAACTGGAATGAAAG-
AATAGTTTGATTGAGACCTGC 4871
      |||  |  |  |  ||  ||||  ||  ||  ||  |  ||  ||  |  ||||
||
Db          907 -TTTCTAGGACGACATCTGGC-----CTTAAAAGATCGTAACAGGT--
AAACAGACAAGC 856

Qy          4872 TCCA-----
CTATGTGTTGCTAAAACACATGCTATGAGCACTCGAGGAAACACTATAT 4924
      ||||  ||  |  |  ||  ||  ||  ||  ||  ||  ||  ||  ||
Db          855 TCCAAAGCACTCTCT-TTTTTCT-----
TCCTGCAAAAACCACTGCAGGAG----- 811

Qy          4925
TTTTTCCAAAAAATATGTGATTATATATGTTAAAGTATAGATAACATTTACACTTGGAT 4984
      ||  |||  ||  |  ||  |  ||  ||  ||  ||  ||  |  ||||  ||  ||||
|
Db          810 TTCTTCAGCCAATTCAGTATCTTTAGATTTCAGAAGCAT--
ACTGCATTGCATCCTTGTA 753

Qy          4985
ACATATGTGCATTTACTGTATTTCTTGTAAGCATATTTTGGGGGAAAGTGCTGCTGAT 5044
      |  ||||  |||||  |||  ||||
|
Db          752 A-----GGCTGTCTTTCTTGACAGCT-----CTAC-
ACT 724

```



Qy 5045  
ATGATACAAGTAGACAAAAATTTAAATGAAATTTTGTGCATTCTATGGAAAATGGTTTTCT 5104  
|| || || || |  
Db 723 CTGTTTCCAG----CGA-----  
TTGTTGC----- 704

Qy 5105  
GGTAAACTGAGAAGGATATTAAAAATAAGTG GCTTTTTTCTGGGCTACCATTATTGTTTGA 5164  
| | | | | | |  
|  
Db 703 -----CTTTGAAG-----  
AGATAAGCAGC-----A 684

Qy 5165 TTTCTCTTTGTCAAGTGTATAGAACCTGTC-  
ATACATT CATGATAAGTAGCACTGAAAAA 5223  
| | | | | | | | | | | | |  
Db 683 ATTCTCCT-----GAAC---  
TCAATGAGTTCATGTT----- 656

Qy 5224  
TTACTCATTCAAATTTCCCCTGGGCACGTAAGGCCAAAATATTGCCGGTTGGGATTTCAAG 5283  
| | | | | | | | | | | | |  
| | | |  
Db 655 TTTC-----CAAA-----CGCTGAGC-----AAGCGAGATATTG-----  
TCAA 622

Qy 5284  
GTCAGTGACGACGCATTT CCTCCCAGTACAGACCCCCCAGCCCCCCTTGCTGGACATGGG 5343  
| | | | | | | | | | | | |  
Db 621 GT-----TGTCAT-----  
AAGCATCTATTGATGTTC----- 596

Qy 5344  
GAGGCAGAGAGTCACTTGACCATCCAGAAATACATGACTACAAGTCCTTTATGACTGTTT 5403  
| | | | | | | | | | | | | | | |  
Db 595 ---GCAGAG-----CCTGATAATCTT-----CTT-----  
CT----- 573

Qy 5404  
GCCATTTTTTTTTAATGGTACTTAGTATTTTGATCAAACTTTAGTCTCCAGAACTAAACAA 5463  
| | | | | | | | | | | | |  
Db 572 -----  
GTAATAAAAAAGATTGTTCAATGATTCAT----- 545

Qy 5464 GTCCCTAAGTTTCCTTATTTTAAATTTACTGTGACTAGATTTGAAGCAAATA--  
AATACTC 5521  
| | | | | | | | | | | | | | | | | | |  
|  
Db 544 -TCAC--AGATTTGTTGTTATGGTT-----  
CTGAAC TGAACGCAAAATACGGTTTCAC 496

Qy 5522 CAGATCCATGCAGCTAGAACACACTTGCTTCCACTACTAAATATACAGGGTATG-  
TCCTA 5580  
| | | | | | | | | | | | | | | | | | |  
|  
Db 495 CAG----TGGTAGCTGTTTAAC-CTTGCTGAAATAATTGACTGCAC-  
GAGTGTGATCCAA 442

Qy 5581 ACATGGAGTTAACTGGAATAGCAGTACA-CTAGCA--

AGTATCTGTGAATCCTTAGCACT 5637  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 441 CCGTGGAGACAGCACCATCAGCAAATCATTAAACAACAGAGGCT-  
 TGAATTCTAAGTA-- 385

Qy 5638  
 GACGGGTAAACAGAAATGCTTTGGTAATACCTACTTAGTTAATTGGAGGAAGTAGTAAAT 5697  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 384 -----GAACTGTATTGCTCTG-----TAGT-----  
 ATAGT---T 359

Qy 5698  
 AAACATTAGGTAATCTGCAGATTACTTCAAATGGGAAAAATCTTTTTGTAGACTCTATAG 5757  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 358 CCACATT-GGCAACCT-----TGGTAATGATATCTTTG-----  
 AAT 324

Qy 5758 TACCTCTCTATTCACTAGCTTCTGAAAAGGGAGGAGTATTTTTAG----  
 TTTGACAATT 5813  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 323 TGCCCT-TCT-TTC-CAGGCATCAGTT---  
 GGATGATTTCATCATGGTAATTATGGCATT 270

Qy 5814  
 TAATAATTTAAAAACAAGACATCTCCAGGTAGGAAAAATGAAAGCTATTTTCATGCAAAC 5873  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 269 TCATATTCTTCATACTTG-----  
 TCATACAAAA 242

Qy 5874  
 ATTATCTAATTTAGCTTAAAGTGAAAGTGGTAATACTGTTGGTTTCTGTAAATGTTGCA 5933  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 241 A--CACCAGTTCTGCCCAAAGATGAGCTTG-----TTC-----  
 TGCA 207

Qy 5934  
 GGGTTTTAACTTTATAATTACTTTAATATTTTTGATAACTAGAAATCTAGTATTGCCAT 5993  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 206 GCTCTTAGCAC-----CTTGGGAATATTCACT--CTAGA---  
 CCAGAACAGC--- 165

Qy 5994 AAAGGAACTAAGTGC-  
 CCATCAAAGATTTGTTTGGTATAAATAAAGAATTATTTGTTTT 6052  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 164 -----TCCAGGTGCTCCCTCA---TTTTCTGAGGCTTAAATTTAGAGT--  
 ATAGAATA 117

Qy 6053  
 GTTTTCAATGACAGTAAGCTACAAATCATGATGCTTAAAACTTTCTAAAGATGAATTGT 6112  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 116 G----CTAATTCAGTAAAC-----ATTCC-----  
 CATGTGAGCTCGCTCAA----- 80

Qy 6113

GTGGCAGTGATTGGTCTGTTTGTGGAGAATGTATGAAAGCTATTAATATTCTAGAATAGA 6172  
 || ||||| ||| ||| | ||  
 |  
 Db 79 GTCCCAGTG-----CTG-----  
 CTTCCAACATGG- 56

Qy 6173  
 TTAATAAATTGGCTATGTTGTTCCAATGAATGTACAGCACTTCCATTAACCTTTTGAAAGC 6232  
 || ||||| |||  
 |  
 Db 55 -----  
 TGATCAGCTCTT-----C 43

Qy 6233  
 AACACAGCCTTAAACTCAATGCTTTTGTCTTTATGACATGGGAATGTTCTGTCATCAATG 6291  
 || | ||| | | || | || | | || ||  
 ||  
 Db 42 AAAATAGC-----CACGATCC---TGATAGTAGCCAGTAG-----  
 GCCAACAGTG 1

RESULT 9  
 US-10-478-914-57/c  
 ; Sequence 57, Application US/10478914  
 ; Patent No. 7335755  
 ; GENERAL INFORMATION:  
 ; APPLICANT: NAKAGAWARA, AKIRA  
 ; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
 ; FILE REFERENCE: 7388-80899  
 ; CURRENT APPLICATION NUMBER: US/10/478,914  
 ; CURRENT FILING DATE: 2003-11-26  
 ; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-162775  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-255226  
 ; PRIOR FILING DATE: 2001-08-24  
 ; NUMBER OF SEQ ID NOS: 417  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 57  
 ; LENGTH: 2336  
 ; TYPE: DNA  
 ; ORGANISM: Homo sapiens  
 US-10-478-914-57

Query Match 14.1%; Score 5407; DB 1; Length 2336;  
 Best Local Similarity 35.5%; Pred. No. 0;  
 Matches 1495; Conservative 0; Mismatches 802; Indels 1914;  
 Gaps 215;

Qy 351  
 CTGCCCCGAGAAAGGGGTGGCCGCGCTCCAGAACAATTTCTTCATCACAAACCTGATGGAC 410  
 | || |||| | ||||| ||| || | ||  
 |  
 Db 2336 CAGCTCGAGCAC-ATGTGGCC-----  
 TTTTTTTTTTTTTTTTTTTTGTGA- 2293

Qy 411  
 GTGCTGCAGCGAACTCCAGGCAGCAACGCTGAGGAGTCTTCCATCCTGGAGACAGTCACT 470  
 ||| || || |||| | |||| ||| | || |

|  
Db 2292 -----TTCTCAGAGCTGCC-----AGGAG---TGCATC---  
GAGCCTGTAATT 2256

Qy 471  
GCTGTGGCTGCGGGAAAGCCTCTCTCTTGCCCAAACCACGATGGGAATGTGATGGAATTT 530  
| ||| |||| ||| || ||

|  
Db 2255 TC-----CTG-----TTCTCTGAATCCC---CC-----  
ATCT 2232

Qy 531  
TACTGCCAGTCCTGTGAGACTGCCATGTGTGCGGGAGTGACGGAGGGGGAGCACGCAGAG 590  
| |||| ||| || |||||

Db 2231 TTCTGCAGCTCC-----  
AAGCTTTGTGT----- 2209

Qy 591 CACCCACAGTTCC----  
ACTCAAGGATGTGGTGGAAACAGCACAAAGGCCTCGCTCCA--G 644  
|||||| || |||| |||| | ||| | |||

|  
Db 2208 ---CCCACAG--CCTGTGACTC-----TGTGCT--AACAAATC---  
GCTATTGTCCAGTG 2164

Qy 645  
GTCCAGCTGGATGCTGTCAACAAAAGGCTCCCAGAAATAGATTCTGCTCTTCAGTTTCATC 704  
| | ||| |||| ||| |||| | | | |||| | ||| ||||

Db 2163 GGGCGAATGGTGGCTGG-AACTAAAGAATTGCTG-----TCTGGT-  
TTCTATTCAA 2114

Qy 705  
TCTGAAATCATTTCATCAGTTAACCAACCAAAAGGCCAGCATCGTGGATGACATTTCATTCC 764  
|| |||| || || || || ||

Db 2113 TC-----CAGGTA-----  
GCGAGATATATGAATG----- 2090

Qy 765  
ACCTTTTGATGAGCTCCAGAAGACTTTAAATGTGCGCAAGAGTGTGCTGCTTATGGAATTG 824  
||||||

Db 2089 -----  
GACTTT----- 2084

Qy 825 GAGGTCAACTATGGCCTCAAACACAAAGTCCTCCAGTCGCAGCTGGATAC--  
TCTGCTCC 882  
|| || || || | || |||

|||||||  
Db 2083 -----TCGAA-----TCGTCATG-----  
TGAATAACGTCTGCTC- 2055

Qy 883  
AGGGGCAGGAGAGCATTAAGAGCTGCAGCAACTTCACAGCGCAGGCCCTCAACCATGGCA 942  
|||| || |||| | | |||||

Db 2054 ---GGCATGA-----  
AGGCTCAGAGCCATG--- 2033

Qy 943  
CGGAGACCGAGGTCCTACTGGTGAAGAAGCAGATGAGCGAGAAGCTGAACGAGCTGGCCG 1002  
|| | |||| | || || | |||

|  
Db 2032 -----CTAG----GAAG-----

GATTAACCTCGTAGGCTG 2008

Qy 1003  
ACCAGGACTTCCCCTTGCACCCGCGGGAGAACGACCAGCTGGATTTCATCGTGAAACCG 1062  
|||| | | | | | | |  
||  
Db 2007 ACCA-----CTAACATCC-----TTT----GTGGTA--  
CG 1984

Qy 1063  
AGGGGCTGAAGAAGTCCATCCACAACCTCGGGACGATCTTAACCACCAACGCCGTTGCCT 1122  
|||| | | | | | | | | | |  
Db 1983 AGGG-----AGAA-ACATTCCCAAGTATC-----  
ATTTTATTAC----- 1950

Qy 1123  
CAGAGACAGTGGCCACGGGCGAGGGGCTGCGGCAGACCATCATCGGGCAGCCCATGTCCG 1182  
| | | | | | |  
Db 1949 -----ACTTAAT-----  
TTTCTA 1937

Qy 1183 TCACCATCACCACCAAGGACAAAGACGGTGAGCTGTGCAA--  
AACCGGCAACGCCTACCT 1240  
| | | | | | | | | | | | | | | |  
||  
Db 1936 TC-CCAT-ACCCCCA-----AAATAAGGCTAGCTATTTAATTAGTTGGC--  
CGCTTTTCT 1886

Qy 1241 CACCGCCGAAGTGTGACACCCCGACGGGAGCGTGGCAG-  
ACGGGGAGATCCTGGACAACA 1299  
| | | | | | | | | | | | | | | |  
Db 1885 CT---TAATTTTGTAGTGTCTGTGATAATGTGTGAGTTTGGGAAAATGCT----  
AAGT 1833

Qy 1300  
AGAACGGCACCTATGAGTTTTTGTACACTGTCCAGAAGGAAGGGGACTTTACCCTGTCTC 1359  
|| || | | | | | | | |  
|||  
Db 1832 AGCTTTTTCAC-----TTAGAACACTGT-----TATTTTC----  
TCTT 1800

Qy 1360  
TGAGACTCTATGACCAGCACATCCGAGGCAGCCCGTTTAAGCTGAAAGTGATCCGATCCG 1419  
| | | | | | | | | | | | | |  
|  
Db 1799 TAAAGTTTTCTACCTTACATTT-----ATTATAGC--  
ATAGTTATCTTTATAG 1754

Qy 1420  
CTGATGTGTCTCCACACAGAAAGGCGTGAAGAGGCGCGTTAAGTCCCCGGGGAGCGGCC 1479  
| | | | | | | | | | | | | |  
||  
Db 1753 CATAGATG-----CAGAAAGTAAGAGAGAGCTTGTTT--  
TTTCAAGAAAACAACC 1706

Qy 1480  
ACGTCAAGCAGAAAGCTGTGAAAAGACCCGCAAGCATGTACAGCACTGGAAAACGAAAAG 1539  
| | | | | | | | | | | | | |  
|  
Db 1705 -----CT-TTAAATAC-----TTTCCAACCC-----

ATGAAGGG 1677

Qy 1540

AGAATCCCATCGAAGACGATTTGATCTTTTCGAGTGGGTACCAAAGGAAGAAATAAAGGAG 1599

| | | | | | | | | | | | | | | |

Db 1676 AAAAATCCTCC-----TTT----TTTC-----

CCCCAAG----- 1652

Qy 1600 AGTTTACAAATCTTCAGGGGGTAGCTGCA-

TCTACAAATGGAAAGATATTAATTGCAGAC 1658

| | | | | | | | | | | | | | | |

Db 1651 -----TGCATTCTACTTAT-----

TACTTTGCA--- 1629

Qy 1659 AGTAACAACCAATGTGTGCAGATATTTTCCAATG---ATGG---

CCAGTTCAAAGTCGT 1712

| | | | | | | | | | | | | | | | | | | | | |

Db 1628 TTTTCTCCCAAAGT---CCAAATTTATGCAAAGAAAATAGAAACAAGTTCAAATG-

CAA 1573

Qy 1713

TTTGGCATACGGGGACGCTCTCCGGGGCAGCTGCAGCGGCCACAGGAGTGGCTGTACAT 1772

| | | | | | | | | | | | | | | | | |

|

Db 1572 T---GCAT-----TAAC-----CAAATAAAACAAGTCTC-----

CTT 1544

Qy 1773

CCCAGTGGGGACATAATCATTGCCGATTATGATAATAAATGGGTCAGCATTTTCTCCTCC 1832

| | | | | | | | | | | | | | | | | | | | | |

Db 1543 CAAATTAGGAACC-AACCTAAGCATTGTAAAGTGTAGCAGAATCAGAATT-----

CT-- 1492

Qy 1833

GATGGGAAATTTAAGACAAAATTGGATCAGGAAAGCTGATGGGACCCAAAGGAGTTTCT 1892

| | | | | | | | | | | | | | | | | |

| |

Db 1491 -----TTT-----AAAAATTAGAT-----TTGGAACCTGAA-----

CT 1464

Qy 1893

GTGGACCGCAATGGGCACATTATTGTTGTGGACAACAAGGCGTGCTGCGTGTATCT-- 1950

| | | | | | | | | | | | | | | | | | | | | |

Db 1463 ATATAATTCATAATTCTCATTTTT-CTGTGGAATAA-----

TTTTATCTTT 1417

Qy 1951 -

TCCAGCCAAACGGGAAAATAGTCACCAGGTTTGGTAGCCGAGGAAATGGGGACAGGCAG 2009

| | | | | | | | | | | | | | | | | | | | | |

Db 1416 CTCCTGTATACCTGAAAAAATGTCCATAGGCTT-----

AAAGGGTCATGCT- 1371

Qy 2010 TTTGCAGGTCC--CCATTTTGCAGCTGTAAATAGCAATAATGAGATTATTA--

TTACAGA 2065

| | | | | | | | | | | | | | | | | | | | | |

Db 1370 TTTACA-TTCCTTCCATATCACAG--

GTACTATGAAGTAAGGAGACTTTTAGGTTTCTTT 1314

Qy 2066 TTTCCATAATCATTCTGTCAAGGTGTTTAATCAGGA---

AGGAGAATTCATGTTGAAGTT 2122

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||||
Db      1313 TTGTCTTAAAC--TCAGAC-AGCTTTGTAAGCAGTAGTGTGTAGATTACAAG----
AGTT 1261

Qy      2123
TGGCTCAAATGGAGAAGGAAATGGGCAGTTTAAATGCTCCAACAGGTGTAGCAGTGGATT 2182
      | |||| | || | | || | || | |||| | || |
||
Db      1260 AG--ACAAAAGCAGGCGCGACTGAGAAG-----
AGTTGGTGGGGGAGAAGCTT- 1215

Qy      2183
AAATGGAAACATCATTGTGGCCGACTGGGGAAACAGCAGGATCCAGGTTTTTGATGGGAG 2242
      || |||| | || | | || || |||| |
Db      1214 ---GGGGCACTTC-----CTGTC-----
ACTCAACACATTCCAGAT----- 1182

Qy      2243
TGGATCATTTTTGTCCTACATTAACACATCTGCTGACCCACTCTATGGCCCCCAAGGCCT 2302
      || ||| | || | | |||| || || || ||
|||
Db      1181 -----CACTAAAAATTTCCACACCCTCTGCAT---TCCC-----
CCT 1147

Qy      2303
GGCCCTAACTTCAGATGGTCATGTTGTGGTTGCAGACTCTGGAAATCACTGTTTCAAAGT 2362
      |||| ||| ||| | | || | | ||| ||| |
|
Db      1146 TGCCC--ACTCCAGTT-----
CCCGGTATTTTCTGATTCCATAT 1110

Qy      2363
CTATCGATACTTACAGTAATGGTGGGCAGGTGGATAACCGCTTCCATGGTCTTGCACTAT 2422
      | | || |||| || | | || |||
|||||
Db      1109 GTTGTGGTATTTACCATACT-----TCTCTCCCT-----
CACTAG 1075

Qy      2423
AAACTGGAATGGATTTTCTCAATGCGGGACCAGATTATGACTAGAGTTTTTATGCCAGAAG 2482
      ||| |||| || ||| |||
Db      1074 GCTCTG-----GCAAGAC-----
TGC----- 1059

Qy      2483
GAATCATTGGTGAACCTTTCCAAGGTTATTTCTGAATGTAACAATTTTCCTTAAAAATGACT 2542
      ||| ||| | ||| || ||||| | |||
Db      1058 -----TTCAGAGG-----GGATG---CA--
TTCCTTTAGATTG--- 1031

Qy      2543
TATCCAATTTCTGTATTTACCTTTAGGGTTAAAAAACTCTTCTACTGAATCTATAAA 2602
      |||
Db      1030 -----
CAC----- 1028

Qy      2603
AACTGCAGTTTTACATCTGTGAACTATGGCTTAAGGGACAGGATTTATGTAGCTAAACTA 2662
      | || | | ||| ||| ||||| | ||| ||| | ||| |

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Db 1027 -AAAGCGG-----AGCTGGGAA-AATGGCT-----GGCAG--  
TTTCAGAATCTAGTC-- 985

Qy 2663  
ATTTTGCAAATCAAACAGACACTTAAAAAACTAGCATATGTAAAGGTATTCGTTAATCC 2722  
| | | | | | | |

||  
Db 984 -----ACGATCGCACGCATG-----AGCA-----  
CC 964

Qy 2723  
TGTGAATGGTAGCTTTTGCACAGAACTTCCAAAAGCAAAACAAAACAAAATCTATTGTA 2782  
| | | | | | | |

|||  
Db 963 T-----CAC---ACATCCA-----  
TGT- 950

Qy 2783  
GTTATATACTTCATTTAACCTAGGTCACAAGACCCAGGGAATCTTCTAACCTCACTTTTA 2842  
| | | | | | | | | | | |  
Db 949 -----CCCT-----ACCCGCCCC-----  
CCCGCTC----- 930

Qy 2843  
CAGTAGGTATTACTCTTGTGACATTTTTTTGGTTATCAACAATAAATTACTTT 2902  
| | | | | | | | | | | |  
Db 929 CCG-----CCCCTG-----  
CAGCT----- 916

Qy 2903  
GGAAAAAGTAAGGCTGTCTTGCAAATGATCCCAGCTCTGATTAGCAGCCCTCTGGAGTT 2962  
| | | | | | | | | | | |  
Db 915 -----GGCTGACCTG-----TCTCA-----  
CCCACTG----- 894

Qy 2963  
CAGAACTTAAGTATCAGTGCAAATTTCTCAACCTTTCTGGGTTAGACAAAGATCCTTTTT 3022  
| | | | | | | | | | | | | | | |  
Db 893 CTGGCCTATCG-AACGG-----CCAGGACTGTCTGGTTTTGGC-----  
TC----- 855

Qy 3023  
TGTGTGTTCTTTTACCACCCCTTTGGCTCACCTTGTATCAGCAAACAAAGTACTTCTTC 3082  
| | | | | | | | | | | | | | | |  
Db 854 ---GTG-----CCTTTG---TCCATGT-----  
CTGGCTTAGTTCCTCT-- 823

Qy 3083  
AGGGAAACCTGAAATTTCTAATGCCTTGAAAAGCATATTACAAAAGTAATGCTACCTTTT 3142  
| | | | | | | | | | | | | | | |  
Db 822 -----CTGTCTATGCT--TGCCT-----  
CTACC---- 802

Qy 3143 GGGAAACAACTGCCCC-GTTAACTCCAGATCATTG--  
CACTGGAATGTAATCAAGAAAG 3199  
| | | | | | | | | | | | | | | |  
||  
Db 801 -----CCCACCGCCCCAGGCGGCACAAG-TGTTTGGCCACACAAA---  
ACTAGAGATAG 752



Qy 3200  
TTAGTCATGTTTTATGTACCATGTTTTACACGTGTCTCTTCTCTTCGACTTCCTGAAAG 3259  
| | | | | | | | | | | | | | | |  
Db 751 AAA---AGGTGGTAAAAAC-----  
TTCAAACTTTTCTAAATTCTCCAAC----- 711

Qy 3260  
CGAAAGCTTTACCTCCTGCAAATGTCAGCACATGTAGTAGGACACCAGTATCCTAGGACA 3319  
| | | | | | | | | | | | | | | |  
| | |  
Db 710 ----AG-TTTATTTCTTGTGAATTTCTTC-  
CTTCTTTAAATACTCCATTTTAAGAAAACA 657

Qy 3320  
GAGAGCCATAAGTAGCCCTTTGGAGGACTGATGGTGTCAACCAAAGGCATGTGATTGATT 3379  
| | | | | | | | | | | | | | | |  
Db 656 AA-----AAAATTA-----  
ATTATCTAAAGGCAAAGAATGGA-- 625

Qy 3380  
AATGATTCCCCCTTAGAAAGCAAGTGTTACCAAAGTTGTGTTATCTTGAAAGCATTACAG 3439  
| | | | | | | | | | | | | | | |  
Db 624 ----AAGCAACCTT-----TGTGTTCC-----TTATAATAAC-  
TGACTTCATAAC-- 585

Qy 3440  
GTAAGGGCATGTTATGGTTATTTATCATTGTTTAATGAATAGTAGAGGTGTCAAGGGACT 3499  
| | | | | | | | | | | | | | | |  
| |  
Db 584 -----TCTC-----TCCAG---  
CT 574

Qy 3500  
ATGTATACATGATTAGGGTAAGATAGAATGTATTATATATATATATATATACACACAC 3559  
| | | | | | | | | | | | | | | |  
Db 573 GCGTT-----  
ATGGGATGT----- 560

Qy 3560 ACATATATATAGCTGAATCTTTGGTGTATTGAAATAGGCAGCAC--TCTGAA---  
AGACA 3614  
| | | | | | | | | | | | | | | |  
| | | |  
Db 559 --GTATAAAAAGCT---TCTGTTCTG---  
AGAACAAAGGAGCACGTGCAGAAATGAGACG 508

Qy 3615  
GAAGCTTCGTCCAGCCACTCTTCAGCACATTCTTTACTAAGCAGTTTAAAGCCGTCCTA 3674  
| | | | | | | | | | | | | | | |  
| |  
Db 507 AAAAAATC-CACTGACAGTATTC----CATTAC---ACAAATTACTTAAAAG--  
ATTTTA 458

Qy 3675  
GTGGAGCAAGCCCTAAAGCAGATTTAATTTTTGCCATTTTCCAAGAATGACGGTGGTGGC 3734  
| | | | | | | | | | | | | | | |  
| | | |  
Db 457 GT----CAAGCCCCTCAACAGATT-----CAATTTTAAAA-----  
TGGC 423

Qy 3735

```

TTTTAGTCAGAAAATGGCCTTCTGTGCTTTCAAAAAAAAAACAAAAAAAAACCACACAC 3794
      |||||      ||||| |||  ||  |
||
Db      422 TTTTAGT-----
TAAAAAAAAAAATTGAAAGTGCTTAC 389

Qy      3795
ACACATAAAAAACCCAACAGGTCAAAATAAAAGTTGAACTTGAGTTACATTTAATTTAAA 3854
      ||  ||| ||| ||  |||      |||||  ||||| |
Db      388 CCAGTAAAAGAACCGAAGTAGTCC-----TGAAC---
GTTACGT----- 352

Qy      3855
TATAAATGCATTTTGAGAAATGTTAAGAACAATTTAGTCAATCGTTCATCTGTCATTGGT 3914
      ||  | |||  |  ||| ||  |  || |||||  |  ||  |
|||
Db      351 ----AAGACTTTTT----ACAGTT-GGATC---TTTGTCAAAGGGGATGGG-----
GGT 309

Qy      3915
ACTGTAAATAAGCTGTGGTCTATTTCCACTGTTTAATTTTCTACTCAGTTCTACCAAAT 3974
      ||  | | ||| |  |||  |  ||  |  ||||| | |
Db      308 GATGGGAGA-AAGCAG-----CAAC-----
GACAATCAAAAAGTTCGAGC---- 269

Qy      3975
AGGATGTCATGTTTGACATTTTTGATAGTGACTTTGGGGTCTTCTTCACTGAAAGCACCT 4034
      || | ||| | | | || |  ||||  ||
Db      268 -----TGCT-GTGGC-
TAGAGGACAACCTTCTGTG----- 242

Qy      4035
TAGAACTGTACTATAAGAAAACATTTCCCCTATGTATAATTATATGAATGTGATGTTTAT 4094
      |||||
Db      241 -----
TTTCC----- 237

Qy      4095
TGCTTATTAATTTATAAATTCAGTCATTCTCTATATAGGACTTCTTAAATTTAGAAGGGA 4154
      | ||||| |||||  |  | | ||
|
Db      236 -----AGATAGGA-
TTCTTGCTGTAGAAATGGAA 209

Qy      4155
AATCTAGCTACTTCAAATTGTCTGTTAAATTTATTATGCCCAAATCAACCTCTGAAAAAA 4214
      || |||  ||      || ||  || ||
Db      208 CTTCCAGC-----CA-----GCACAG--
CATCC----- 188

Qy      4215
GGTTTTTCCAGGAAGATTTACATTTAGGTTTAAATTTTTTTTAGTTAGGTAGAGTTTTAA 4274
      | |||  ||      |||||
Db      187 ----TGTC-----CA-----
GTAGAG----- 175

Qy      4275
AAAATACTTGAGCCTGTCCGTGATAAAGCTATAAAATTCAATAACTTTTTAGAATGTTAA 4334
      |  ||||  |||| ||  |||| | | ||||  || ||
Db      174 -----AAATGAGTTTGTGAGT--TAAACAAAAAA-----

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AAATT----- 141

Qy 4335  
ATGAAGACACTGTTTCCTAACATCAGTGAGATACATCTTTGAATTTAAACATTCATATTT 4394  
||| ||| || ||| | || | | ||| || |  
Db 140 ----AGATACTGGAACC-----CAG---GCTAGA-  
CGAGGTATTGAACCGCGC----- 101

Qy 4395  
ACTGAGTACCTACTAGGTACCAAGTACTCTTTTAGGCACTGGAAATACAGTGATGGACAA 4454  
| | | ||| || || | ||| | || | ||| || ||  
|||  
Db 100 -CAGATTTCTTGCAG---CCCTG---TCTGCTCAGCTC--GCATTCCAGT--  
AGGCCAA 52

Qy 4455 AA---  
CAGGTAAAAAATCGCTGCCCCCTCAGAGCTGACATTCTGGGGTGGGAATTTTCATT 4511  
| | | || ||| || ||| | | | | | | ||  
|  
Db 51 CAGTGCTCGAGGAATTCCGCAGC-----  
TTTTAGAGCAGAAGTAACACT 8

Qy 4512 TTGCCACGTAC 4522  
| |||||  
Db 7 T----CCGTAC 1

# RESULT 10

US-10-478-914-57  
; Sequence 57, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 57  
; LENGTH: 2336  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-57

Query Match 14.0%; Score 5370.5; DB 1; Length 2336;  
Best Local Similarity 41.1%; Pred. No. 0;  
Matches 1464; Conservative 0; Mismatches 805; Indels 1295;  
Gaps 219;

Qy 18 TGCGG-GGAGCTAAGTC--  
CCCAGATTGGAGGAGGCTGGCTCTGGTCTTCGATGCACAGG 74  
| ||| | || || | | | || | | ||| ||||  
|

Db 2 TACGGAAGTGTTACTTCTGCTC----TAAAAGCTGCGGAAT----TCCTCGA-  
GCACTG- 51

Qy 75 AGTGGCCGTTATGGAACGC-AGCAGCAGCGTGCAGGGT--  
CAAAGACAGCCGGCCCCCA 131  
||||| | ||||| || ||| | ||| ||||| ||| || | ||| |

Db 52 -TTGGCC-TACTGGAATGCGAGCTG-  
AGCAGACAGGGCTGCAAGGAAATCTGGCGC----- 104

Qy 132  
TGTCAGTGGTCTAGGATGGCCAGTGAAGGCACCAACATCCCAAGTCCTGTGGTGCGCCAG 191  
|| | || | ||| | | || |||| ||| |

Db 105 -----GGTT---CAAT-----ACC-TCGT--CTAG-CCTG-  
GGTTC----- 132

Qy 192  
ATTGACAAGCAGTTTCTGATTTGCAGTATATGCCTGGAACGGTACAAGAATCCCAAGGTT 251  
|||| ||| |||| | | | | ||| || | || | ||

||  
Db 133 -----CAGTATCTAATTTTTTTTTTTGT---TTTAACTG-AC---AAACTCAT--  
TT 174

Qy 252 CTCCCCTGTCTGCACACTTTCTGCGAGAGGTGCCTGCAGAAC--  
TACATTCTGCCCACA 309  
||| ||| | ||| | | |||| ||| | |||| ||| |

|  
Db 175 CTCTACTG---GGACA-----  
GGATGCTGTGCTGGCTGGAAGTTCCATTTCTACAGCAA 225

Qy 310 GTTTAACCCTCTCCTG---CCCAG-  
TGTGCCGCCAGACCTCCATCCTGCCCAGAAAGGG 365  
| || ||| || | ||| || | |||| | ||

Db 226 G---AATCCTATCTGGAAACACAGAAGT-----  
TGTCTCTAGCC----- 262

Qy 366 GTGGCCGC-  
GCTCCAGAACAATTTCTTCATCACAAACCTGATGGACGTGCTGCAGCGAAC 424  
| || |||| |||| ||| |||| | ||| ||| ||

|  
Db 263 ---ACAGCAGCTC--GAACTTTTT-----TGATTGTCGT--  
TGCTGCTTTC 301

Qy 425 TCCAGGCAGCAACGCTGAGGAGTCTTCCATCCTGGAGAC--  
AGTCACTGCTGTGGCTGCG 482  
||| || ||| | | ||| ||| ||| || | ||||

Db 302 TCC---CATCACCCC-----CATCC--  
CCTTTTGACAAAGATCCAAGTGT----- 341

Qy 483  
GGAAAGCCTCTCTCTTGGCCAAACCACGATGGGAATGTGATGGAATTTTACTGCCAGTCC 542  
|||| |||| ||| | ||||

|  
Db 342 AAAAAG-----TCTT-----ACG-----  
TAACAGTTC 363

Qy 543  
TGTGAGACTGCCATGTGTGTCGGGAGTGACGGAGGGGGAGCACGCAGAGCACCCACAGTT 602  
| |||| | | || | || ||| ||||

||  
Db 364 AG---GACTACTTCGGTTC----TTTTAC--TGGGTAAGCAC-----

TT 398

Qy 603 CCACTCAAGGATGTGGTGGAAACAGCACAAAGGCCTCGCTCCAGGTCCAGCTG----  
GATGC 658

|| | | | | | | | | | | | | | | |

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Db 399 TCAAT-----

TTTTTTTTTTTAACTAAAAGCCATTTTAAAATTGAATCTGTTGAGGGGC 452

Qy 659 -TGTCACAAAAGGCTCCCAGAAATAGATTCTGCTCTTCAGTTC-  
ATCTCTGAAATCATT 716

|| | | | | | | | | | | | | | | |

||

Db 453 TTGACTAAAA-----

TCTTTTAAGTAATTTGTGTAATGGAATACTGTCAGTGGATTTTTT 507

Qy 717

CATCAGTTAACCAACCAAAAAGGCCAGCATCGTGGATGACATTTCACCTTTGATGAG 776

| || | | | | | | | | | | | | | |

Db 508 CGTCT-----CATTT---CTGCA-CGTG-----

CTCCTTTGTT--- 536

Qy 777 CTC----CAGAAGACTTTAAATGTGCGCAAGAGTGTGCTGCTTATG-GAATTG-  
GAGGTC 830

|| | | | | | | | | | | | | | | |

|| |

Db 537 CTCAGAACAGAAG-

CTTTTTATACACATCCCATAACGCAGCTGGAGAGAGTTATGAAGTC 595

Qy 831 AACTATGGCCTCAAACACAAAG--TCC--TCCAGTC---  
GCAGCTGGATAC----- 874

| || | | | | | | | | | | | | | |

Db 596

AGTTATTATAAGGAACACAAAGGTTGCTTTCCATTCTTTGCCTTTAGATAATTAATTTTT 655

Qy 875 ---

TCTGCTCCAGGGGCAGGAGAGCATTAAAGAGCTGCAGCAACTTCACAGCGCAGGCCCT 931

| | | | | | | | | | | | | | | |

Db 656 TTGTTTTCTTAAATG-----

GAGTATTTAAAGAAGGAAGAAATTCACA----- 699

Qy 932

CAACCATGGCACGGAGACCGAGGTCCTACTGGTGAAGAAGCAGATGAGCGAGAAGCTGAA 991

| | | | | | | | | | | | | | | |

|

Db 700 -----AGAAATA-----AACTGTTGGAGAATTT-----

AGAAAAGTTTGA 734

Qy 992

CGAGCTGGCCGACCAGGACTTCCCCTTGCACCCGCGGGAGAACGACCAGCTGGATTTTCAT 1051

| | | | | | | | | | | | | | | |

Db 735 AGTTTTTACC-ACCTTTTCTATCTCTAGTTT---TGTGTGGCCAAACA-CTTG--

TGCCG 787

Qy 1052

CGTGGAACCGAGGGGCTGAAGAAGTCCATCCACAACCTCGGGACGATCTTAACCACCAA 1111

| | | | | | | | | | | | | | | |

Db 788 CCTGG-GGCGGTGGGG--GTAGAGG--CAAGCATAGAC-

AGAGAGGAACCTAAGCC----- 836

Qy 1112  
CGCCGTTGCCTCAGAGACAGTGGCCACGGGCGAGGGGCTGCGGCAGACCATCATCGGGCA 1171  
||||| ||| || ||| | | ||| | | |

||  
Db 837 -----AGACA-TGGACAAAGGCACGAG-----  
CCAAAACCGACA 870

Qy 1172  
GCCCATGTCCGTCACCATCACCACCAAGGACAAAGACGGTGAGCTGTGCAAAACCGGCAA 1231  
| | | | | | | | | | | | | | | | | | | | | |

Db 871 GTCC-TGGCCGT-TCGAT-----AGGCCA---GCAGTGGG-TGAG-----  
ACAGG--- 909

Qy 1232  
CGCCTACCTCACC GCCGA ACTGAGCACC CCGGACGGGAGCGTGGCAGACGGGGAGATCCT 1291  
| | | | | | | | | | | | | | | | | | | | |

Db 910 -----TCAGCC-----AGCTGCAGGGGCGGGAGCGGG-  
GGGCGGGTAG----- 947

Qy 1292  
GGACAACAAGAACGGCACCTATGAGTTTTTGTACACTGTCCAGAAGGAAGGGGACTTTAC 1351  
| | | | | | | | | | | | | | | | | | | | |

Db 948 GG---ACATGGATG-----TGTGAG-----GTGCTCATGC--  
GTGCGATCGTGA CT----- 988

Qy 1352 CCTGTCTCTGAGACTCTATGACCAGCACA---TCCGAGGCAGC-  
CCGTTTAAGCTGAAAG 1407  
| | | | | | | | | | | | | | | | | | | | |

|  
Db 989 --AGATTCTGAAACT-----GCCAGC-CATTTTCC----CAGCTCCGCTT-----  
TG 1028

Qy 1408  
TGATCCGATCCGCTGATGTGTCTCCACCACAGAAGGCGTGAAGAGGCGCGTTAAGTCC- 1466  
| | | | | | | | | | | | | | | | | | | | |

Db 1029 TG---CAATCTAAAGGAATGCATCC--CCTCTGAAG-----  
CAGTCTT 1066

Qy 1467 -  
CCGGGGAGCGGCCACGTCAAGCAGAAAGCTGTGAAAAGACCCGCAAGCATGTACAGCAC 1525  
| | | | | | | | | | | | | | | | | | | | |

Db 1067 GCCAG-----AGCCTAGTGAGGGAGAGAAGTATGGTAAATACCACAA-  
CATAT----- 1113

Qy 1526  
TGGAACGAAAAGAGAATCCCATCGAAGACGATTTGATCTTTTCGAGTGGGTACCAAAGG 1585  
| | | | | | | | | | | | | | | | | | | | |

||  
Db 1114 --GGAATC----AGAAAATAC---CGGGAAC-----TGGAGTGGG---  
CAAGGG 1150

Qy 1586  
AAGAAATAAAGGAGAGTTTACAAATCTTCAGGGGGTAGCTGCATCTACAAATGGAAAGAT 1645  
| | | | | | | | | | | | | | | | | | | | |

Db 1151 --GGAATGCA-GAGGGTGTGGAAATTTTTTAGTG-----ATC-----  
TGGAATGTG 1193

Qy 1646  
ATTAATTGCAGACAGTAACAACCAATGTGTGCAGATATTTTCCAATGATGGCCAGTTCAA 1705  
| | | | | | | | | | | | | | | | | | | | |

[illegible]

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|          | | |||          ||| | |||| |          ||||
|
Db          1533 TTCCTAAT-----TTGAAGGAGACTTG-----
TTTTATTT 1562

Qy          2239
GGAGTGGATCATTTTTGTCCTACATTAACACATCTGCTGACCCACTCTATGGCCCCCAAG 2298
          ||          || || | |||| || || |          ||| ||
Db          1563 GG-----TTAATGCATTGCATTTGAACT--
TGTTTCTATTTTCTTTG----- 1602

Qy          2299
GCCTGGCCCTAACTTCAGATGGTCATGTTGTGGTTGCAGACTCTGGAAATCACTGTTTCA 2358
          | ||| || ||| |          |||          ||| | | ||
||
Db          1603 -----CATAAATT----TGGACT-----TTG-----GGAGAAAAATG---
CA 1632

Qy          2359
AAGTCTATCGATACTTACAGTAATGGTGGGCAGGTGGATACCCGCTTCCATGGTCTTGCA 2418
          |||| | | || | |||| |||
Db          1633 AAGTAATAAGTAGAATGCACT-----TGGG-----
GGA----- 1660

Qy          2419
CTATAAACTGGAATGGATTCTCAATGCGGGACCAGATTATGACTAGAGTTTTTATGCCA 2478
          ||| ||| ||||| || ||          | | |||
Db          1661 ----AAAAAGGA--GGATTTTTC-----CCT-----
TCATGGGTT----- 1689

Qy          2479 GAAGGAATCATTTGGTGAACTTTCCAAGGTT-
ATTTCTGAATGTAACAATTTTCCTTAAAAA 2537
          |||| | | || | |||| |||| | |||| ||
Db          1690 ---GGAA-----
AGTATTTTAAAGGGTTGTTTTCTTGAAAAACAAGCTC----- 1731

Qy          2538
TGACTTATCCAATTTCTGTATTTACCTTTAGGGTTAAAAAAAACCTTCTACTGAATCT 2597
          || | | ||||| || | || || | |||          ||| ||
||
Db          1732 --TCTCTTAC--TTTCTGCATCTATGCTATAAAGATAA-----CTA-TG---
CT 1772

Qy          2598
ATAAAAACTGCAGTTTTTACATCTGTGAACATATGGCTTAAGGGACAGGATTTATGTAGCTA 2657
          |||| || ||          ||||          ||||
|
Db          1773 ATAATAAATG-----TAAG-----GTAG-
AA 1792

Qy          2658
AACTAATTTTGCAAATCAAACAGACACTTAAAAAACTAGCATATGTAAAGGTATTCGTT 2717
          ||||          |||| | | | ||| || |||
|
Db          1793 AACT-----TTAAAGAGA-----
AAATAACAGTGTTCT--T 1820

Qy          2718 AATCCTGTGAATGG-----
TAGCTTTTGCACAGAAGTTCCAAAAGCAAAACAAAAACAAA 2772
          ||          |||| | |||| ||| | || |||| ||| ||||

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Db 1821 AA---GTGAAAAGCTACTTAGCATTTTCCCA-  
AACTCACACATTATCAACAGAAACACT 1875

Qy 2773  
ATCTATTGTAGTTATATACTTTCATTTAACCTAGGTCACAAGACCCAGGGAATCTTCTAAC 2832  
| | | | | | | | | | | | | | | | | |

Db 1876 AAAAATT-AAGAGAAAAGCGGC----CAACTAATTAAATAG-----  
CTAGC 1916

Qy 2833  
CTCACTTTTACAGTAGGTATTACTCTTGTGACATTTTTTTGGTTATCAACAATAATAT 2892  
| | | | | | | | | | | | | | | | | |

Db 1917 CTTATTTT---GGGGGTAT-----  
GGGATAGAAAATTAAGTGT 1951

Qy 2893  
AAATTACTTTGGAAAAAGTAAGGCTGTCTTGCAAAATGATCCCAGCTCTGATTAGCAGCC 2952  
| | | | | | | | | | | | | | | | | |

Db 1952 GAAT-----AAAATGATA-----CTTG-GGAATGTT-----TCT-----  
CC 1981

Qy 2953 CTCTGGAGTTCAGAACTTAAG-  
TATCAGTGCAAATTTCTCAACCTTTCTGGGTTAGACAA 3011  
| | | | | | | | | | | | | | | | | |  
Db 1982 CTC---GTAC--CACAAAGGATGTTAGTG-----GTCAGCC--  
TACGAGTTA----- 2021

Qy 3012  
AGATCCTTTTTTGTGTGTTCTTTTACCACCCCTTTGGCTCACCTTGATCAGCAAACAA 3071  
| | | | | | | | | | | | | | | | | |  
Db 2022 --ATCCTTCCTAG-----CATGGCTCTGAGCCTT---CATGCCG-----  
AGCAGAC-- 2062

Qy 3072  
AGTACTTCTTCAGGGAAACCTGAAATTTCTAATGCCTTGAAAAGCATATTACAAAAGTAA 3131  
| | | | | | | | | | | | | | | | | |  
Db 2063 -GTTATTC-----ACATGACGATTC-----GAAAAGTCCATT-  
CATATATCT 2102

Qy 3132  
TGCTACCTTTTGGGAAACAAACTGCCCCGTTAACTCCAGATCATTGCACTGGAATGTAAT 3191  
| | | | | | | | | | | | | | | | | |

Db 2103 CGCTACC-----  
TGGATTTGAATAGAAA 2125

Qy 3192  
CAAGAAAGTTAGTCATGTTTTATGTACCATGTTTTACACGTGTCTTCTCTTCGACTT 3251  
| | | | | | | | | | | | | | | | | |

Db 2126 CCAGACAG-----CAATTCTTTAGTTCCA-----  
GCCACCATTGCCCC 2164

Qy 3252  
CCTGAAAGCGAAAGCTTTACCTCCTGCAAATGTCAGCACATGTAGTAGGACACCAGTATC 3311  
| | | | | | | | | | | | | | | | | |

Db 2165 ACTGGA--CAATAGCGAT-----TTGTTAGCA-----

CAGAGTC 2196

```
Qy          3312
CTAGGACAGAGAGCCATAAGTAGCCCTTTGGAGGACTGATGGTGTCAACCAAAGGCATGT 3371
      ||| | | | | | | | ||| ||||| ||
Db          2197 ACAGG-CTGTGGGACACAA--AGC---TTGGAG--CT-----
GCA--- 2228
```

```
Qy          3372
GATTGATTAATGATTCCCCCTTAGAAAGCAAGTGTTACCAAAGTTGTGTTATCTTGAAAG 3431
      || ||| ||||| ||| | | | | | ||
|
Db          2229 GAAAGATGGGGGATTC-----AGAGAACAGGAAATTACAGG-----CTCG-
ATG 2271
```

```
Qy          3432
CATTACAGGTAAGGGCATGTTATGGTTATTTATCATTGTTTAAATGAATAGTAGAGGTGTC 3491
      || | | | | | || || | || || | | |
Db          2272 CACTCCTGGCA---GC-----
TCTGAGAATACAAAAAAAAAAAAAAAAAAAA 2312
```

```
Qy          3492 AAGGGACTATGTATACATGATTAG 3515
      || | | | | | || |
Db          2313 AAAAGGCCACATGTGCTCGAGCTG 2336
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# RESULT 11

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US-10-478-914-64/c
; Sequence 64, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 64
; LENGTH: 2120
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-64
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Query Match          14.0%; Score 5350; DB 1; Length 2120;
Best Local Similarity 39.1%; Pred. No. 0;
Matches 1348; Conservative 0; Mismatches 718; Indels 1378;
Gaps 206;
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```
Qy          59 GTCTTCGATGCACAGGAGTGGCCGTTATGGAACG--
CAGCAGCAGCGTGCAGGGTCAAAG 116
      |||| || ||||| || | ||||| || ||
Db          2120 GTCT-----AGCGGCCG-----CGACCTGCAGCT-
CGAGC----- 2092
```

Qy 117  
ACAGCCGGCCCCCATGTCAGTGGTCTAGGATGGCCAGTGAAGGCACCAACATCCCAAGT 176  
||| ||| | | | | | | |  
Db 2091 ACATGTGGCCTTTTTTTTTTTTTTTT-----  
TAAAAGAA----- 2059

Qy 177  
CCTGTGGTGCGCCAGATTGACAAGCAGTTTCTGATTTCAGTATATGCCTGGAACGGTAC 236  
| | | | | |||| | | |||| | | ||| |||| | | |||  
|  
Db 2058 --TGAGTTACATTT-ATTGATATG--GTTTGTATATGCTTTATA-----  
AATGGT-C 2012

Qy 237  
AAGAATCCCAAGGTTCTCCCCTGTCTGCACACTTTCTGCGAGAGGTGCCTGCAGAACTAC 296  
| | | | | || | |||| | || | || | || | || | |  
Db 2011 A-----CCCT---TTGAAACATGTATTATTACTATTTGGGGGAGAGG-----  
GGGACT-- 1967

Qy 297 ATTCTGCCCACAGTTTAACCTCTCCTGCCCAGTGTGC-  
CGCCAGACCTCCATCCTGCC 355  
||| | |||| ||| | | |||| |  
||  
Db 1966 GTTCAT-----TTTA-----CAGGGGACAAGCAAGA-----  
CAGGCT 1935

Qy 356  
CGAGAAAGGGGTGGCCGCGCTCCAGAACAATTTCTTCATCACAAACCTGATGGACGTGCT 415  
| | | | | || | |||| | ||||| | | | |  
Db 1934 CAAGGAGGGAAAGGACAGGCTCAAAG-----TCATCACA-----  
GTGTG 1896

Qy 416  
GCAGCGAACTCCAGGCAGCAACGCTGAGGAGTCTTCCATCCTGGAGACAGTCACTGCTGT 475  
| | | | | ||| | | ||| |  
Db 1895 G-----GGCTGGAATGC-----  
AGTTGCCCTTCCT----- 1871

Qy 476  
GGCTGCGGGAAAGCCTCTCTCTTGCCCAAACCACGATGGGAATGTGATGGAATTTTACTG 535  
||| ||| | | | |  
Db 1870 -----TCTTTCT-----  
TTTTGC-- 1858

Qy 536  
CCAGTCTGTGAGACTGCCATGTGTCGGGAGTGCACGGAGGGGGAGCACGCAGAGCACCC 595  
| | | | | |||| | |||| | |||| |  
Db 1857 ----ACAT-----CTTC--GTCTCTAGGGTG--AGGAGGGG-----  
TGCAGG----- 1823

Qy 596  
CACAGTTCCACTCAAGGATGTGGTGGAAACAGCACAAGGCCTCGCTCCAGGTCCAGCTGGA 655  
|||| | | |||| | |||| | | ||||| |  
Db 1822 CACAGG--CACCCAAG-----ACAGCT-----GC-----  
GTCCAGC---- 1793

Qy 656  
TGCTGTCAACAAAGGCTCCCAGAAATAGATTCTGCTCTTCAGTTCATCTCTGAAATCAT 715  
||| | | | | | | | | | | | | | | | |

Db 1792 -----CCCG-----GCCCCAC-----  
CTGTGGTC-- 1774

Qy 716  
TCATCAGTTAACCAACCAAAAGGCCAGCATCGTGGATGACATTTCACCTTTGATGA 775  
||||| | | || | ||||| |||| | || | |  
||||

Db 1773 ---TCAGTGA--CGCCCCAGAGGCC--CATC-----  
TTCCCCACATAATGA 1734

Qy 776 ----  
GCTCCAGAAGACTTTAAATGTGCGCAAGAGTGTGCTGCTTATGGAATTGGAGGTCA 831  
||||| | || | | |

Db 1733 GGCTGCTCCA-----  
TCCTCCTCAAAG----- 1712

Qy 832  
ACTATGGCCTCAAACACAAAGTCCTCCAGTCGCAGCTGGATACTCTGCTCCAGGGG---C 888  
| | || | || | | || | | | || | || ||

Db 1711 -CCCAGACCTATTTTCATAAG---CCCCAGACCCAC-----  
CTTACCCAGGGCCCC 1664

Qy 889 AGGAGAGCATTAAAGAGCTGCAGCAACTTC-AC----AGCGCAG---  
GCCCTCAACCATGG 940  
| |||| | ||||| || |||| | || | | ||||| |

Db 1663 AAGAGAAC----  
AGAGCTGGAGACACTTCTACTCCTAGCACTGGATGCCCTCTCC----- 1613

Qy 941  
CACGGAGACCGAGGTCTACTGGTGAAGAAGCAGATGAGCGAGAAGCTGAACGAGCTGGC 1000  
||| || ||||| | || ||

|||  
Db 1612 -----CCTCCT-GTGAAGCTGTAGGTGG-----  
GGGGTGG- 1584

Qy 1001 CGACCAGGACTTCCCCTT---GCA--  
CCCGCGGGGAGAACGACCAGCTGGATTTTCATCGTG 1055  
|||| | || | || | || | | || | | || | |  
||  
Db 1583 -----AGGACACCCCTTTAAGGCAGGCTCGGGGGGCTATGAACTCCAAGACTCC----  
TG 1533

Qy 1056  
GAAACCGAGGGGCTGAAGAAGTCCATCCACAACCTCGGGACGATCTTAACCACCAACGCC 1115  
||| || | | | | |||| | | || ||| || |  
Db 1532 GAAGCCAGTAAGAAGTGGAAGGTAGGCACACCATTG--  
GATTTTTAT----- 1485

Qy 1116  
GTTGCCTCAGAGACAGTGGCCACGGGCGAGGGGCTGCGGCAGACCATCATCGGGCAGCCC 1175  
|| | | || | | |||| | | || | || |

||  
Db 1484 -TTTTCACTGAGCTA-----AGAGAGGAGATT--CAG-CTAT-----  
GGAATCCA 1443

Qy 1176  
ATGTCCGTCACCATCACCACCAAGGACAAAGACGGTGAGCTGTGCAAAACCGGCAACGCC 1235  
| || | || | || | || | || | || |  
|||

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1442 GAGAGCGT-----TCTACAGGAACA-----GAACAG-----
AAATTGGCTGGGCC 1403

Qy      1236
TACCTCACCGCCGAACTGAGCACCCCCGACGGGAGCGTGGCAGACGGGGAGATCCTGGAC 1295
      ||| |   ||| ||
||||||
Db      1402 -----CTGGG---CCCAGA-----GGAGG-
CCTGGA- 1381

Qy      1296 AACAAGAACGGGCACCTATGAGTTTTTGTACACTGTCCAGAAGGAAGGGGACTTTA-
CCCT 1354
      || |   || ||| || || |||
|
Db      1380 -----GCCGC-----T TACTGTTCAGTG-CCAG-----
CTTCATCCTT 1349

Qy      1355 GTCTCTGAGACTCTATGAC--
CAGCACATCCGAGGCAGCCCGTTTAAGCTGAAAGTGATC 1412
      | | || | |||| | | | | ||| ||| | | |||
Db      1348 GGCAC TCTGCCTCTCACACAGCATCGC-TCC--GGCTCCCAG----
AGC----- 1307

Qy      1413
CGATCCGCTGATGTGTCTCCCAACACAGAAGGCGTGAAGAGGCGCGTTAAGTCCCCGGGG 1472
      || | | | | | | | | | | | | | | | | |||
Db      1306 ----CCACAGTGG-----CAGCCGCTGGAGGC-TGTGGCAGC-
AGCTGCTGCCCT---- 1263

Qy      1473
AGCGGCCACGTCAAGCAGAAAGCTGTGAAAAGACCCGCAAGCATGTACAGCACTGGAAAA 1532
      ||| |||| | | | | | | | | | | | | | | |
Db      1262 ----GCC----CAAG--GAGGGATGTG---GGCTTG---GCTCTGACAGTTC---
AAGC 1223

Qy      1533
CGAAAAGAGAATCCCATCGAAGACGATTTGATCTTTTCGAGTGGGTACCAAAGGAAGAAAT 1592
      | ||||| | | | | | | | | | | | | | | |
|||||
Db      1222 CAGAAAGAG----CCTTAGAAGTCATT CAGGACATTCCCAT--
TTTACAGATGATGAAAT 1169

Qy      1593 AAAG----
GAGAGTTTACAAATCTTCAGGGGGTAGCTGCATCTACAAATGGAAAGATATT 1648
      || | ||||| ||||| | | | | | | | | | ||
Db      1168 AAGGCTCAGAGAG-----
AGCAGGGGCTTTCAAGAACAATAAAGGTGGAG----- 1124

Qy      1649 AATTGCAGACAGTAACAACCAATGTGTGCAGA---TATTTTCCAATGATGGC---C---
AG 1700
      | | | | ||| | || ||| ||| || | | | | | | | | |
||
Db      1123 ACTGGA ACTCAG--GCCTCC--
TG TCTGCTGAGGGTGTCTGCCCATGCTCTCTCTCAGAG 1068

Qy      1701 TTCAAAAGTCGTTTTTGGCATAACGGGGACG--
CTCTCCGGGGCAGCTGCAGCGGCCACAG 1758
      || ||| || | | | |||| | | | | ||| ||| | | |
Db      1067 TT TCTGAGTGGTGGTGTCTGGAGGGGCTGGACACGCAAGGG-----
AGCTGGCCCTCGT 1015

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Qy 1759  
GAGTGGCTGTACATCCCAGTGGGGACATAATCATTGCCGATTATGATAATAAATGGGTCA 1818  
| | | | | | | | | | | | | | | | | | | |  
||  
Db 1014 GTGTGTCTGTCTGTGCC----GGGATGT-GTCTGTG--  
GCTTCTGTCTCTGAACGTGCCA 962

Qy 1819  
GCATTTTCTCCTCCGATGGGAAAATTTAAGACAAAAATTGGATCAGGAAAGCTGATGGGAC 1878  
| | | | | | | | | | | | | | | | | | | |  
|  
Db 961 GGGGTTTTGTGTCTCTGTGTG-----TGCTCTCT-----  
CTGTGGGTGC 925

Qy 1879 CCAAAGGAGTTTCTGTGGACCGCAA--  
TGGGCACATTATTGTTGTGGACAACAAGGCGTG 1936  
| | | | | | | | | | | | | | | | | | | |  
||  
Db 924 TC-----CTGTGTGCAGGAACTTGGGGCCA-----  
TGGCCAGAGAGGGATG 884

Qy 1937  
CTGCGTGTTCCTCCAGCCAAACGGGAAAAATAGTCACCAGGTTTGGTAGCCGAGGAAA 1996  
| | | | | | | | | | | | | | | | | | | |  
Db 883 -GGC-----CTATTCCT-ACAATCTTGGGAGGCCTCCACAG-----  
GCTGAGCTGG 840

Qy 1997  
TGGGGACAGGCAGTTTGCAGGTCCCCATTTTGCAGCTGTAAATAGCAATAATGAGATTAT 2056  
| | | | | | | | | | | | | | | | | | | |  
Db 839 TGGGGA-----GGGTCC-----TGAAG-GGTAGAGTG-  
AAGATGGGGACT-- 802

Qy 2057 TATTACAGATTTCCATAATCATTCTGTCAAGGTGTTTAATCAG-  
GAAGGAGAATTCATGT 2115  
| | | | | | | | | | | | | | | | | | | |  
Db 801 --TTAC-----TCC-----CAG-----  
CGGAGAGGAAGAAACCA--- 775

Qy 2116  
TGAAGTTTGGCTCAAATGGAGAAGGAAATGGGCAGTTTAAATGCTCCAACAGGTGTAGCAG 2175  
| | | | | | | | | | | | | | | | | | | |  
Db 774 -GAAGATAGGCT----TGGGGCATG-GATGGG-----  
AAAGGTCTTG--- 739

Qy 2176  
TGGATTCAAATGGAAACATCATTGTGGCCGACTGGGGAAACAGCAGGATCCAGGTTTTTTG 2235  
| | | | | | | | | | | | | | | | | | | |  
Db 738 -GAAGTAGGATGG-----GGCAAGGGGAAACA--  
AAGCCCCA-----A 705

Qy 2236 ATGG-  
GAGTGGATCATTTTTGTCTACATTAACACATCTGCTGACCCACTCTATGGCCCC 2294  
| | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 704 ATGGAGTATGGGTC-----CCTGGA-----AGTTGACACACTCT-  
TAGCCCT 664

Qy 2295 CAAGGCCTGGCCCTAACTTCAGATGGTCATGTTGTGGTTGCAGACTCTGGAAAT--



Db 344 TTCCTCTGTGTGAACTGT--GCATCCCGCT----CCATC-----  
TTCTCTTCCAC--- 301

Qy 2889  
ATATAAATTACTTTGGAAAAAGTAAGGCTGTCTTGCAAATGATCCCAGCTCTGATTAGC 2948  
| | | | | | | | | | | | | | | | | |  
Db 300 ----GAGTTGCTTCTGATAC-----TCCT-  
CGTACTCCTCCCGGCTC-----A 263

Qy 2949  
AGCCCTCTGGAGTTTCAAGTATCAGTGCAAATTTCTCAACCTTTCTGGGTTAGA 3008  
| | | | | | | | | | | | | | | | | |  
Db 262 TGCCCT-----GAGCTTCGG---C--TGCCGACTTGTC--  
CCCATCT----- 228

Qy 3009  
CAAAGATCCTTTTTTGTGTGTTCTTTTACCACCCCTTTGGCTCACCTTGTATCAGCAA 3068  
| | | | | | | | | | | | | | | | | |  
Db 227 CCCTTATCC-----  
TCGCCGCCTCCAGGCTCCAGTG----- 195

Qy 3069  
CAAAGTACTTCTTCAGGGAAACCTGAAATTTCTAATGCCTTGAAAAGCATATTACAAAAG 3128  
| | | | | | | | | | | | | | | | | |  
Db 194 --AGG---TTCTTCAG-----CTG-----GCC-----  
GC----- 176

Qy 3129 TAATGCTACCTTTTGGGAAACAACTGCCCGTTAACTCCA-  
GATCATTGCACTGGAATG 3187  
| | | | | | | | | | | | | | | | | |  
|  
Db 175 -----CCACCAT---GG-----TCTTCACCATGAACGCCATGGTCTT--  
CGCCGGCCGG 132

Qy 3188  
TAATCAAGAAAGTTAGTCATGTTTTATGTACCATGTTTTACACGTGTCTCTTCTCTTCG 3247  
| | | | | | | | | | | | | | | | | |  
Db 131 GGCACCGG-----GCGCC-  
TGCTACCACGCG----- 107

Qy 3248  
ACTTCCTGAAAGCGAAAGCTTTACCTCCTGCAAATGTCAGCACATGTAGTAGGACACCAG 3307  
| | | | | | | | | | | | | | | | | |  
| | | |  
Db 106 ----CCAGGCACCGGGCACGTCCGCGCCTACT----TCAGC-----  
ACTCCAG 67

Qy 3308  
TATCCTAGGACAGAGAGCCATAAGTAGCCCTTTGGAGGACTGATGGTGTCAACCAAAGGC 3367  
| | | | | | | | | | | | | | | | | |  
Db 66 TA-----GGCCAACAGT-GCTC----  
GAGGA----- 46

Qy 3368 ATGTGATTGATTAATGATTCCCC--  
CTTAGAAAGCAAGTGTTACCAAAGTTGTGTTATCT 3425  
| | | | | | | | | | | | | | | | | |  
| |  
Db 45 -----ATTCCGCAGCTTTTAGAGCAGAAGTAAC-----  
ACT 15



Qy 3426 TGAAAGCATTACAGGTAAGGGCAT 3449  
 | | | | |  
 Db 14 T-----CCGTACA-----GGCCT 2

RESULT 12

US-10-478-914-64

; Sequence 64, Application US/10478914  
 ; Patent No. 7335755  
 ; GENERAL INFORMATION:  
 ; APPLICANT: NAKAGAWARA, AKIRA  
 ; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
 ; FILE REFERENCE: 7388-80899  
 ; CURRENT APPLICATION NUMBER: US/10/478,914  
 ; CURRENT FILING DATE: 2003-11-26  
 ; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-162775  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-255226  
 ; PRIOR FILING DATE: 2001-08-24  
 ; NUMBER OF SEQ ID NOS: 417  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 64  
 ; LENGTH: 2120  
 ; TYPE: DNA  
 ; ORGANISM: Homo sapiens  
 US-10-478-914-64

Query Match 13.9%; Score 5309; DB 1; Length 2120;  
 Best Local Similarity 39.3%; Pred. No. 0;  
 Matches 1311; Conservative 0; Mismatches 726; Indels 1302;  
 Gaps 201;

Qy 14 GGGCTGCGGGGAGCTAAGTCCCCAGAT-  
 TGGAGGAGGCTGGCTCTGGTCTTCGATGCACA 72  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | | |  
 Db 3 GGCCTGTACGGAAGTGTTACTTCTGCTCTAAAAGCTGCGGAAT----TCCTCGA-  
 GCACT 57

Qy 73 GGAGTGGCCGTTATGGAACGCAGCAGCAG-----  
 CGTGCAGGGTCAAAGAC----- 118  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 58 G--TTGGCC-  
 TACTGGAGTGCTGAAGTAGGCGCGGACGTGCCCGGTGCCTGGCGCGTGGT 114

Qy 119  
 AGCCGGCCCCCATGTTCAGTGGTCTAGGATGGCCAGTGAAGGCACCAACATCCC-----A 173  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 115 AGCAGGCGCCCGGTGCC-----  
 CCGGCCGGCGAAGACCATGGCGTTCATGGTGA 163

Qy 174  
 AGTCCTGTGGTGCGCCAGATTGACAAGCAGTTTCTGATTTGCAGTATATGCCTGGAA--C 231  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 164 AGACC-ATGGTGGGC-----GGCCAGCTG---  
 AAGAACCTCACTGGGAGCCTGGGAGGC 213

Qy 232 GGTACAAGAAATCCCAAGGTTCTCCCTGTCTGCACACTTTCTGCGAGAGGTC-----  
CTG 287  
|  
|  
Db 214 GG--CGAGGAT---AAGG-----  
GAGATGGGGACAAGTCGG 244  
Qy 288  
CAGAACTACATTCTTGCCACAGTTTAAACCCTCTCTTGCCAGTGTGCCGCCAGACCTCC 347  
|  
|  
Db 245 CAG-----CCGAAG-----CTCAGGGC--  
ATGAGCCGGGAGGAGTAC 279  
Qy 348 -----ATC-----CTGCCCAGAGAAAGGGGTGGCCGCGCTCCA-  
GAACAATTTCTTCAT 394  
|  
|  
Db 280  
GAGGAGTATCAGAAGCAACTCGTGGAAGAGAAGATGGAGCGGGATGCACAGT-----T 332  
Qy 395  
CACAAACCTGATGGACGTGCTGCAGCGAACTCCAGGCAGCAACGCTGAGGAGTCTTCCAT 454  
|  
|  
Db 333 CACA---CAGA-GGAAG-GCAG-AGCG-----GGCCACACTGCGGAGCC--  
ACTT 374  
Qy 455 CCTGGAGACAGTCACTGCTGTGGCTGCGGGAAAGCCTCTCTCTTGC---  
CCAAACCACGA 511  
|  
|  
Db 375 CC--GAGACAAATAC-----  
CGGCTACCCAAGAACGAGACAGATGAGAGCCAGATCCAGA 427  
Qy 512  
TGGGAATGTGATGGAATTTTACTGCCAGTCCCTGTGAGACTGCCATGTGTGTCGGGAGTGCAC 571  
|  
|  
Db 428 T-GGCAGGTGGAGACGTGGAGCTGC----CCCGGGAGCTGGCCAAG-----  
ATGATC 474  
Qy 572  
GGAGGGGGAGCACGCAGAGCACCCACAGTTCCACTCAAGGATGTGGTGGAAACAGCACAA 631  
|  
|  
Db 475 -GAGGAGGA-----CACAG-----AGGAGGAGGAGGAG-----  
AA 503  
Qy 632  
GGCCTCGTCCAGGTCCAGCTGGATGCTGTCAACAAAAGGCTCCAGAAATAGATTCTGC 691  
|  
|  
Db 504 GGCCTCAGTCCTTGGGCAGCTGGC-----CAGC-----CTTCCTG-----  
GC 540  
Qy 692  
TCTTCAGTTCACTCTGAAATCATTTCATCAGTTAAACCAACCAAAAAGGCCAGCATCGTGA 751  
|  
|

Db 541 -----TTGAAC-CTGGGCTCACTCA--AG-----GAC---  
 AAGGCC----- 570

Qy 752  
 TGACATTCATTCCACCTTTGATGAGCTCCAGAAGACTTTAAATGTGCGCAAGAGTGTGCT 811  
 || ||| | | || || | | |||

Db 571 -----CAGGCCACACTGGGGGATCTCAAGCAATC-----  
 AGCTGAGAAGTGT--- 612

Qy 812  
 GCTTATGGAATTGGAGGTCAACTATGGCCTCAAACACAAAGTCCTCCAGTCGCAGCTGGA 871  
 | ||| | || | | || ||| |

Db 613 -C-----ACGTCA--TGTGACCACTTCCCCGGGGTTACCCACTGG--  
 GCTGG- 654

Qy 872  
 TACTCTGCTCCAGGGGCAGGAGAGCATTAAAGAGCTGCAGCAACTTCACAGCGCAGGCCC- 930  
 || | || || | |||| | ||||| |||

Db 655 -----GCCCC-----CATGAGGGC--TAAGAG-TGTGTCAACTTC-CAG---  
 GGACCCA 696

Qy 931 TCAACCAT---GGCACGGAGACCGAGGTCC--  
 TACTGGTGAAGAAGCAGATGAGCGAGA 984  
 | ||| || | || | || |

Db 697  
 TACTCCATTTGGGGCTTTGTTTCCCTTGCCCCATCCTAGT----- 736

Qy 985 AGCTGAACGAGCTGGCCGACCAGGAC--TTCC---  
 CCTTGACCCGCGGGAGAACGACCA 1039  
 ||| || ||| || ||| || |

Db 737 -----TCCAAGACCTTTCCCATCCATGC-CCCAAG-----  
 CCTATCT 772

Qy 1040 GCTGGATTTTCATCGTGGAACCGAGGGGCTGAAGAAGTCCATC----CACAACC--  
 TCGG 1093  
 ||| ||| || | ||| || || |||| | ||| ||

Db 773 TCTGG-TTTCTTCCT---  
 CTCCGCTGGGAGTAAAGTCCCCATCTTCACTCTACCCTTCAG 828

Qy 1094 GACGATCTTAACCACCAAC---GCC----  
 GTTGCCTCAGAGACAGTGGCCACGGGCGAGG 1146  
 || | |||| | || | |||| ||| |

Db 829 GAC---CCTCCCCACCAGCTCAGCCTGTGGAGGCCTC-----  
 CCAAGATTGTAG 874

Qy 1147  
 GGCTGCGGCAGACCATCATCGGGCAGCCCATGTCCGTCACCATCACCACCAAGGACAAAG 1206  
 | | | || || || || |||| | ||||

Db 875 GAATAGGCCCATCCCTC-TCTGG---CCATGGC-----  
 CCAAGTTC---- 912

Qy 1207  
 ACGGTGAGCTGTGCAAAACCGCAACGCCTACCTCACCGCCGAAGTGAAGACCCCGACG 1266  
 ||| | ||| | ||||| |

Db 913 -----CTG-----CACACAG-----

GAGCACCCAC---- 932

Qy 1267

GGAGCGTGGCAGACGGGGAGATCCTGGACAACAAGAACGGCACCTATGAGTTTTTGTACA 1326

|| | | | | | | | | | | | | | | |

||

Db 933 --AGAGAGACACAC-----ACAGGAC-ACAAA-----CCCCTG-----

GCA 966

Qy 1327

CTGTCCAGAAGGAAGGGGACTTTACCCTGTCTCTGAGACTCTATGACCAGCACATCCGAG 1386

| | | | | | | | | | | | | | | |

||||

Db 967 C-GTTCAG-AGACAGAAGCCACAGACACATCCC---GGCAC--

AGACAGACACACACGAG 1019

Qy 1387 G-CAGCCCGTTTAAGCTGAAAGTGATCCGATCCGCTGATGTGTCTCC-

CACCACAGAAGG 1444

| | | | | | | | | | | | | | | |

Db 1020 GCCAGCTCCCTT--GC-----GTGTCCAGCCCCTCC----

AGACACCACCACTCAGAAAC 1068

Qy 1445 CGTGAAGAGGCGCGTTAAGTCCCCGGGGAG-CGGCCACGTCAAGCAGAAAG-CTGTG-

AA 1501

|| | | | | | | | | | | | | | | |

Db 1069 TCTGAGAGAGAGCAT-----

GGGCAGACACCCTCAGCAGACAGGAGGCCTGAGTTC 1119

Qy 1502

AAGACCCGCAAGCATGTACAGCACTGGAAAACGAAAAGAGAATCCCATCGAAGACGATTT 1561

| | | | | | | | | | | | | | | |

|

Db 1120 CAGTCTC-CA--CCTTTATTGTTCTTGAAAGC-----

CCC-----T 1152

Qy 1562

GATCTTTTCGAGTGGGTACCAAAGGAAGAAATAAAGGAGAGTTTACAAATCTTCAGGGGGT 1621

| | | | | | | | | | | | | | | |

Db 1153 GCTCTCTC---TGAG--CCTTA-----TTTC--

ATCATCTG----- 1181

Qy 1622

AGCTGCATCTACAAATGGAAAGATATTAATTGCAGACAGTAACAACCAATGTGTGCAGAT 1681

| | | | | | | | | | | | | | | |

||

Db 1182 -----TAAAATGGGAA-----

TGTCCTGA- 1200

Qy 1682 ATTTTCCAATGATGGCCAGTTCAAAAG-

TCGTTTTGGCATACGGGGACGCTCTCCGGGGC 1740

| | | | | | | | | | | | | | | |

|

Db 1201 -----ATGAC---TTCTAAGGCTCTTTCTGGCTT-----

GAACTGTCAGAGCC 1240

Qy 1741 AGCTGCAGCGGGCCACAGGAGTGGCTGTACATCCCAGTG-

GGGACATAATCATTGCCGAT 1799

| | | | | | | | | | | | | | | |

|

Db 1241 A-----AGCCCACA-----TCCCTCCTTGGGCAGGGCA-----

Qy 1800  
TATGATAATAAATGGGTCAGCATTTTCTCCTCCGATGGGAAATTTAAGACAAAAATTGGA 1859  
|| | |||| |||| ||  
Db 1275 GCTGCCA-----CAGC-----  
CTCCAGCG----- 1293

Qy 1860  
TCAGGAAAGCTGATGGGACCCAAAGGAGTTTCTGTGGACCGCAATGGGCACATTATTGTT 1919  
|||| ||| | | |||| | || || | | |  
|  
Db 1294 -----GCTG-----CCTACTGTGGGCTCTGGGAGCC-----  
GGAGCGATGCTG-T 1331

Qy 1920  
GTGGACAACAAGGCGTGCTGCGTGTTTATCTTCCAGCCAAACGGGAAAATAGTCACCAGG 1979  
|| | | |||| | | | || | || | || | || |  
|||||  
Db 1332 GTGAGAGGCA--GAGTGCCAAGGATGAAGCTGGCA-CTGAACAG--  
TAAGCGGCTCCAGG 1386

Qy 1980  
TTTGGTAGCCGAGGAAATGGGGACAGGCAGTTTGCAGGTCCCCATTTTGCAGCTGTAAAT 2039  
| || |||| |||| || ||||  
Db 1387 CCT-----CC-----TCTGGGCC-----CAGGGCC-----  
CAGC----- 1410

Qy 2040  
AGCAATAATGAGATTATTATTACAGATTTCCATAATCATTCTGTCAAGGTGTTTAAATCAG 2099  
|||| ||||| |||||  
|  
Db 1411 --CAAT-----TTCTGT-----  
TCTG 1424

Qy 2100  
GAAGGAGAATTCATGTTGAAGTTTGGCTCAAATGGAGAAGGAAATGGGCAGTTTAAATGCT 2159  
||| ||| ||| |||| ||||  
|  
Db 1425 -----TTCCTGTAGAA----CGCTC-TCTGGA-----  
TT 1448

Qy 2160  
CCAACAGGTGTAGCAGTGGATTCAAATGGAAACATCATTGTGGCCGACTGGGGAAACAGC 2219  
||| |||| |||| || | || | || | || | |||  
Db 1449 CCA-----TAGC--TGGAATC-----TCCTCTCT-TAGC--  
TCAGTGAAAAATAA 1488

Qy 2220  
AGGATCCAGGTTTTTGTATGGGAGTGGATCATTTTTGTCTTACATTAACACATCTGCTGAC 2279  
| ||| | || ||| |||| || ||| |||  
Db 1489 AAATCCCAAAT-----GGTGTG-----  
CCTACCTTCCCACTTCT----- 1522

Qy 2280  
CCTACTATGGCCCCCAAGGCCTGGCCCTAACTTCAGATGGTCATGTTGTGGTTGCAGAC 2339  
|| |||| ||| |  
|  
Db 1523 -TAC----TGGCTTCCAGG-----  
AGTC 1540

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Qy          2340 -
TCTGGAAATCACTGTTTCAAAGTCTATCGATACTTACAGTAATGGTGGGCAGGTGGATAC 2399
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1541 T-TGGAG-----TTCATAGCCCCCGA-GCCTGCCTTAAAGG-----GGTG--
TCC 1582
Qy          2400 -
CCGCTTCCATGGTCTTGCACATATAAACTGGAATGGATTCTCAATGCGGGACCAGATTA 2458
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1583 TCCACCCC-----CACCTACAGC-----TTCACAG-
GAGGGG----- 1614
Qy          2459
TGACTAGAGTTTTTATGCCAGAAGGAATCATTGGTGAACCTTTCCAAGGTTATTTCTGAAT 2518
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1615 -----AGAGGGCATC-----
CAGTGCTAGG-----A 1635
Qy          2519
GTAACAATTTCCCTTAAAAATGACTTATCCAATTTCTGTATTTACCTTTAGGGTTAAAAA 2578
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1636 GTAGAAGTGTC-----TCCAG-CTCTG---TTCTC--
TTGGGG----- 1667
Qy          2579
AAACTCTTCTACTGAATCTATAAAAACTGCAGTTTTACATCTGTGAACATATGGCTTAAGG 2638
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1668 ---CCCT-----GGGTGAAGG-----
TGGGGTCTGGGGCTTATGA 1699
Qy          2639
GACAGGATTTATGTAGCTAAACTAATTTTGCAAAATCAAACAGACACTTAAAAAACTAGC 2698
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1700 AATAGGT-----CTGGGCT-
TTGAGGAGGATGGAGCAGCCTCAT----- 1737
Qy          2699
ATATGTAAAGGTATTTCGTTAATCCTGTGAATGGTAGCTTTTGACAGAACTTCCAAAAGC 2758
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1738 -TATGTGGGGAAGATGG---GGCCTCTG---GG--GCGT---CACTGAG--
ACCACAGGT 1783
Qy          2759
AAAACAAAAACAAAATCTATTGTAGTTATATACTTCATTTAACCTAGGTCACAAGACCCA 2818
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
||
Db          1784 GGGGCCGGGGCTGGACC---GCAGCTGT-----
CTTGGGTGCCTGTGCCT 1825
Qy          2819
GGGAATCTTCTAACCTCACTTTTACAGTAGGTATTACTCTTGACATTTTTTTGGTTAT 2878
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
||
Db          1826 G-----CACCCCTCCTC-----ACCCTAGAGACG-----
GAAGAT 1855

```

Qy 2879  
CAACAATAAATATAAATTACTTTGGAAAAAGTAAGGCTGTCTTGCAAATGATCCCAGC 2938  
||| | | | | | | | | | | |  
|||||  
Db 1856 GTGCAAAAA-----GAAAGAAGGAAG-----  
GCAACTGCATTCCAGC 1893

Qy 2939  
TCTGATTAGCAGCCCTCTGGAGTTCAGAACTTAAGTATCAGTGCAAATTTCTC-----A 2992  
| | | | | | | | | | | | | | | |  
|  
Db 1894 CC-----CACACTG----TGATGACTT-TGAGCCTGTCC---  
TTTCCCTCCTTGA 1935

Qy 2993  
ACCTTTCTGGGTTAGACAAAGATCCTTTTTTGTGTGTTCTTTTACCACCCCTTTGGCTC 3052  
||| ||| | || | | | | | | | | | | | | | | |  
|  
Db 1936 GCCTGTCTTGCTT-----GTCCCCTGTAAAATGAACAGTCCCCCTCTCC-----  
CCC 1982

Qy 3053  
ACCTTGTATCAGCAAACAAAGTACTTCTTCAGGGAAACCTGAAATTTCTAATGCCTTGAA 3112  
| | | | | | | | | | | | | | | | | | | |  
|  
Db 1983 AAATAGTAATA--ATACA---TGTTTC-AAAGGGTGACC----  
ATTTAT-----A 2022

Qy 3113  
AAGCATATTACAAAAGTAATGCTACCTTTTGGGAAACAACTGCCCCGTTAACTCCAGAT 3172  
||||||| ||| | | | | | | | | | | | | | |  
|  
Db 2023 AAGCATATGACAA-----ACCATAT---CAATAAATG-----TAACTC--  
ATT 2060

Qy 3173  
CATTGCACTGGAATGTAATCAAGAAAGTTAGTCATGTTTTATGTACCATGTTTTTCACACG 3232  
| | | | | | | | | | | | | | | | | | | |  
|  
Db 2061 CTTT-----TAAAAAAAAAAAAAAAAAGGC-----  
CACATG 2090

Qy 3233 TGTCTCTTCTCTTCGACTTCCTGAAAGCGAAAGCTTTAC 3271  
|| ||| | | | ||| ||| ||  
Db 2091 TG-----CTCGAGCTGCAGGTCGCGCCGCTAGAC 2120

# RESULT 13

US-10-478-914-17

; Sequence 17, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26

; PRIOR APPLICATION NUMBER: PCT/JP02/05294

; PRIOR FILING DATE: 2001-05-30

; PRIOR APPLICATION NUMBER: JP 2001-162775





|  
Db 274 ---AAGT-----AGAATACAAGGGAGAGAC-CAAAAG---CTTCTATCC-  
AGAGGAGG 318

Qy 466  
TCACTGCTGTGGCTGCGGGAAAGCCTCTCTCTTGCCCAAACCACGATGGGAATGTGATGG 525  
| | | | | | | | | | | | | | | | | | | | | |

||  
Db 319 TGTCTTCTATGGTT-----CTGACAAAGA-----  
TGAAGG 348

Qy 526  
AATTTTACTGCCAGTCTGTGAGACTGCCATGTGTGCGGGAGTGCACGGAGGGGGAGCACG 585  
| | | | | | | | | | | | | | | | | | | | | |

Db 349 AAATTG-----CAG-----AAGCCTACCTT-----  
GGGAAG---- 374

Qy 586  
CAGAGCACCCACAGTTCCTCAAGGATGTGGTGGAACAGCACAAAGGCCTCGCTCCAGG 645  
| | | | | | | | | | | | | | | | | | | | | |

Db 375 -----ACTGTTAC---CAATGCTGTGGT-----CACAGTGCC-  
AGCT----- 407

Qy 646 TCCAGCTGGATG-CTGTCAACAAAAGGCTCCCAGAAATAGATTCT-  
GCTCTTCAGTTCAT 703  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 408 TACT--TTAATGACTCTCAGCGTCAGGCTACC----  
AAAGATGCTGGAACATTGCTGGT 461

Qy 704  
CTCTGAAATCATTCATCAGTTAACCAACCAAAAGGCCAGCATCGTGGATGACATTCATTC 763  
| | | | | | | | | | | | | | | | | | | | | |

||  
Db 462 CTCAATGTACTTAGAATTATTAATGAGCCAA-----CTGCTGC-----  
TGCTATTGCTTA 511

Qy 764  
CACCTTTGATGAGCTCCAGAAGACTTTAAATGTGCGCAAGAGTGTGCTGCTTATGGAATT 823  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 512 CGGCTTAGA-----CAAAAAGGTTGGAGCAGAAAG-AAACGTGCTCATCTT-  
TGACCTG 563

Qy 824 GGAGGT--CAACTATG--GCCTCAAACACAAAGTCCTC-  
CAGTCGCAGCTGGATACTCTG 878  
| | | | | | | | | | | | | | | | | | | | | |

||  
Db 564 GGAGGTGGCACTTTTGTGTGTCAGT-----  
TCCTCACTATTGAGGATGGAATCTTTG 615

Qy 879  
CTCCAGGGGCAGGAGAGCATTAAAGAGCTGCAGCAACTTCACAGCGCAGGCCCTCAACCAT 938  
| | | | | | | | | | | | | | | | | | | | | |

Db 616 -----AGGTCAAGT-----  
CTACAGCT----- 632

Qy 939 GGCACGGAGACCGAGGTCCTACT--  
GGTGAAGAAGCAGATGAGCGAGAAGCTGAACGAGC 996  
| | | | | | | | | | | | | | | | | | | | | |



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          | | | | |
Db          973 -----TTGGTGGTTCTACTCGTA-----
TCCCCAAG----- 998

Qy          1591
ATAAAGGAGAGTTTACAAATCTTCAGGGGGTAGCTGCATCTACAAATGGAAAGATATTAA 1650
          | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| |
Db          999 ATTCAGAAGCTTCTCCAAGACT-----
TCTTCAATGGAAAAGAACTGAA 1042

Qy          1651
TTGCAGACAGTAACAACCAATGTGTGCAGATATTTTCCAATGATGGCCAGTTCAAAAGTC 1710
          | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1043 T----AAGAGCATCAACC-----CTGATGAAG--
CTGTT----- 1070

Qy          1711
GTTTTGGCATACGGGGACGCTCTCCGGGGCAGCTGCAGCGGCCCACAGGAGTGGCTGTAC 1770
          | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1071 -----GCTTATGGTGCAGCTGTCCAG-----
GCAGC-----C 1097

Qy          1771
ATCCCAGTGGGGACATAATCATTGCCGATTATGATAATAAATGGGTCAGCATTTTCTCCT 1830
          | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1098 ATC-----
TTGTC----- 1105

Qy          1831
CCGATGGGAAATTTAAGACAAAAATTGGATCAGGAAAGCTGATGGGACCCAAAGGAGTTT 1890
          | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1106 ----TGG-----
AGACAAG-----T 1116

Qy          1891
CTGTGGACCGCAATGGGCACATTATTGTTGTGGACAACAAGGCGTGCTGCGTGTTTATCT 1950
          | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | |
Db          1117 CTGAG-----AATGTT-----CAAGATTGCTGC-----
TCT 1143

Qy          1951
TCCAGCCAAACGGGAAAATAGTCACCAGGTTTGGTAGCCGAGGAAATGGGGACAGGCAGT 2010
          | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1144 T-----GGA-----
TGTCAC----- 1153

Qy          2011
TTGCAGGTCCCCATTTTGCAGCTGTAAATAGCAATAATGAGATTATTATTACAGATTTC 2070
          | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | |
Db          1154 -----TCCTC-----
TTTCC 1163

Qy          2071
ATAATCATTCTGTCAAGGTGTTTAATCAGGAAGGAGAATTCATGTTGAAGTTTGGCTCAA 2130
          | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Qy 2671  
AATCAAACAGACACTTAAAAAACTAGCATATGTAAAGGTATTCGTTAATCCTGTGAATG 2730

|  
 Db 1467 -----ACTATCACT-----AATGACAAGGGC--CGTT-----  
 TGAGCAAG 1499

Qy 2731 GTAGCTTTTGCACAGAACTTCCA-  
 AAAGCAAAACAAAAACAAAATCTATTGTAGTTATAT 2789  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1500 GAAGACATTGAACGTATGGTCCAGGAAGCTGAG-AAGTACAAAG-  
 CTGAAGATGAGA--- 1554

Qy 2790  
 ACTTCATTTAACCTAGGTCACAAGACCCAGGGAATCTTCTAACCTCACTTTTACAGTAGG 2849  
 | | | | | | | | | | | | | | | | | | | | | |

|  
 Db 1555 -----AGCAGAGG-----GA--  
 CAAGGTGTCATCCAA-----G 1580

Qy 2850  
 TATTACTCTTGTGACATTTTTTTGGTTATCAACAATAAATTACTTTGGAAAAA 2909  
 | | | | | | | | | | | | | | | | | | | | | |

|  
 Db 1581 AATT-CACTTGAGTCCTAT-----GCCTTCAAC-----  
 ATGAAAGCAACTGTTGAAGAT 1628

Qy 2910 GTAAGGCTGTCTTGCAAAATGATCCCAGCTCTGATTAGCAGCCCTCTGGAG-  
 TTCAGAAC 2968  
 | | | | | | | | | | | | | | | | | | | | | |

||  
 Db 1629 GAGAACTTCAAGGCAAGATTAAC-----GATGAGGA-  
 CAAACAGAAGATTCTGGAC 1679

Qy 2969  
 TTAAGTATCAGTGCAAATTTCTCAACCTTTCTGGGTTAGACAAAGATCCTTTTTTGTGTG 3028  
 | | | | | | | | | | | | | | | | | | | | | |

Db 1680 --AAGTGT-AATGAAATTATC---  
 AACTGGCTTGATAAGAATCAGA----- 1719

Qy 3029  
 TTCTTTTCACCACCCCTTTGGCTCACCTTGTATCAGCAAACAAAGTACTTCTTCAGGGAA 3088  
 | | | | | | | | | | | | | | | | | | | | | |

|  
 Db 1720 -----CT---GC-----  
 TGAGAAGGAAGAATTTGAACATCAACAGAAAG 1755

Qy 3089  
 ACCTGAAATTTCTAATGCCTTGAAAAGCATATTACAAAAGTAATGCTACCTTTTGGGAAA 3148  
 | | | | | | | | | | | | | | | | | | | | | |

Db 1756 AGCTGGA-----GAAAG-----  
 TTTG----- 1771

Qy 3149  
 CAAACTGCCCCGTTAACTCCAGATCATTGCACTGGAATGTAATCAAGAAAGTTAGTCATG 3208  
 | | | | | | | | | | | | | | | | | | | | | |

||||  
 Db 1772 ----CAACCCCATCATCACCA-AGC--TGTACCAGAGTG----CAGG-----  
 AGGCATG 1814

Qy 3209 TTTTATGTACCA--  
 TGTTTTACACGTGTCTCTTCTCTTCGACTTCCTGAAAGCGAAAGC 3266

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      |||  |  |  |  |  |  || |||||  | |
|||
Db      1815 -----CCAGGAGGAATGCCTGGGG-----GATTCCTGGTGGTG-
GAGC 1852

Qy      3267
TTTACCTCCTGCAAATGTCAGCACATGTAGTAGGACACCAGTATCCTAGGACAGAGAGCC 3326
      |  |||||  |  |  ||  |  ||||  ||| |
||
Db      1853 T---CCTCC-----CTCTGGTGGT-----GCTTCCT----CAGGGC-
CC 1883

Qy      3327 ATAAGTAGCCCTTTGGAG-
GACTGATGGTGTCAACCAAAGGCATGTGATTGATTAATGAT 3385
      |  || ||| || | ||||  | |||||  |||  ||  ||
|
Db      1884 A-----CCATTGAAGAGGTTGATTAAGCCAACCAA----
GTGTAGATGTAGCATTGT 1931

Qy      3386 TCC-CCCTTAGAAAGCAAGTGTT--
ACCAAAGTTGTGTTATCTTGAAAGCATTACAGGTA 3442
      ||| | | | ||| ||  ||  ||| || ||  | |
Db      1932 TCCACACATTTAAACATTTGAAGGACCTAAATT-----
CGT----- 1968

Qy      3443
AGGGCATGTTATGGTTATTTATCATTGTTTAATGAATAGTAGAGGTGTCAAGGGACTATG 3502
      ||| || ||  |  ||  ||||  | || |||  || ||
||||
Db      1969 --AGCAAATTCTG-----TGGCA--GTTT--TAAAAAGTTAAGCTG-----
CTAT- 2007

Qy      3503
TATACATGATTAGGGTAAGATAGAATGTATTATATATATATATATATATACACACACACA 3562
      ||||| ||  | ||| |  |||  |  ||||  |
|||
Db      2008 -----AGTAAGTTACTGGGCATTCTCAATACTTGAATATGGA-----
ACA 2047

Qy      3563
TATATATAGCTGAATCTTTGGTGTATTGAAATAGGCAGCACTCTGAAAGACAGAAGCTTC 3622
      |||  ||||  | |||  |  | |
|
Db      2048 TAT-----
GCACAGGGGAAGGAAATAACATT 2073

Qy      3623 GTCCAGCCACTCT-
TCAGCACATTCCTTTACTAAGCAGTTTAAAGCCGTCCTAGTGGAGC 3681
      |  |||| | | | |||  |  ||  |||||
Db      2074 G-----CACTTTATAAACACTGTATTGTA-----
AGTGGA 2105

Qy      3682
AAGCCCTAAAGCAGATTTAATTTTTGCCATTTTCCAAGAATGACGGTGGTGGCTTTTAGT 3741
      | || |  |  |||| |  | ||||
Db      2106 ATGCAAT-----
GTCTTAAATAAACTATTT----- 2131

Qy      3742
CAGAAAATGGCCTTCTGTGCTTTCAAAAAAAAAACAAAAAAAAACCACACACACACATA 3801

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Db 2132 --AAAATTGGC--  
ACCATAAAAAAAAAAAAAAAAAAAAAGGCCACATGTGCTCGAG 2187

Qy 3802 AAAAACCCAACAGGTC 3817  
Db 2188 -----CTGCAGGTC 2196

RESULT 14

US-10-478-914-17/c  
; Sequence 17, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 17  
; LENGTH: 2198  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-17

Query Match 13.8%; Score 5272.5; DB 1; Length 2198;  
Best Local Similarity 39.2%; Pred. No. 0;  
Matches 1330; Conservative 0; Mismatches 762; Indels 1303;  
Gaps 187;

Qy 12  
GCGGGCTGCGGGGAGCTAAGTCCCCAGATTGGAGGAGGCTGGCTCTGGTCTTCGATGCAC 71  
Db 2198 GCGACCTGC---AGCTCGAGCAC-----ATGTGGC---  
CTTTTTTTTTTTTTTTTTT 2154

Qy 72 AGGAGTGGCCGTTATGGAACGCAGCAGCAGCGTGCAGGGTCAAAGACA--  
GCCGGCCCCC 129

Db 2153 TTTTTT-----TTATGGTGC-  
CAATTTTAAATAGTTTTATTTAAGACATTGCATTTTCCA 2100

Qy 130 CATG----TCAGTGGTCTAGGATGGCCAGTGAAGGCACCAAC-----  
ATCC- 171

Db 2099 CTTACAATACAGT-  
GTTTATAAAGTGCAATGTTATTTCTTCCCCTGTGCATATGTTCCA 2041

Qy 172 ----CAAGTCCTGTG-  
GTGCGCCAGATTGACAAGCAGTTTCTGATTTGCAGTATATGCCT 226

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      |||||  || |  ||| ||||  | ||  |  |  |  |  |  |  |
||
Db      2040 TATTCAAGTATTGAGAATGC-CCAG--
TAACCTTACTATAGCAGCTTAACTTTTTTAAACT 1984

Qy      227 GGAACGGTACAAGAATCCCA---AGGTTC-
TCCCCTGTCTGCACACTTTCTGCGAGAGGT 282
      |  || |  |  |  |  |  |||| | ||  |||  |||  | |

||
Db      1983 GCCACAGAATTTGCTACGAATTTAGGTCCTTCAAATGT-----
TTTAAATGTGTGG- 1933

Qy      283 GCCTGCAGAACTACATTCTGCCACAGTT-----TAACCCTCTCCT-----
GCCC 328
      ||  |||||  || |  |  |||  |  |  |||||  |

||||
Db      1932 ---AACAATGCTACAT--
CTACACTTGTTGGCTTAATCAACCTCTTCAATGGTGGGCCC 1878

Qy      329
AGTGTGCCGCCAGACCTCCATCCTGCCGAGAAAGGGGTGGCCGCGCTCCAGAACAATTT 388
      |  |  |  ||  ||| |||  |||  ||| |  || |  |  |||| | |

|
Db      1877 TGAG-GAAGC---ACCACCA-----GAGGGAGGAGC-TCCAC-
CACCAGGAAA---T 1835

Qy      389
CTTCATCACAAACCTGATGGACGTGCTGCAGCGAACTCCAGGCAGCAACGCTGAGGAGTC 448
      |  |  ||  |||  ||| | |||  |||| |  |  ||  ||

Db      1834 CCCCCAGGCATTCTCTCTGG-CATGC-----CTCCTG-----
CACTCTGG---- 1796

Qy      449
TTCCATCCTGGAGACAGTCACTGCTGTGGCTGCGGGAAAGCCTCTCTCTTGCCCAAACCA 508
      |  |  |  ||| |||  ||  ||  ||| |||  |  ||  ||||  || |  |

Db      1795 -TACAGCTTGGTGA-----TGATGGGGTTGC-----
AAACTTTCTCCAGCTCTTTC-- 1751

Qy      509
CGATGGGAATGTGATGGAATTTTACTGCCAGTCCTGTGAGACTGCCATGTGTGCGGGAGTG 568
      || ||  ||  |  |  |  || || |

Db      1750 -----TGTTGATGTT-----CAAAT-----
TCTTCCTT----- 1728

Qy      569 CACGGAGGGGGAGCACGCAGAGCACCCACAGTTCCACTCAAGGATGTGGTGGA--
ACAG 626
      |  |  ||||  |||  |||  ||||  || |  |

||
Db      1727 CTC-----AGCAGTCTGA-----
TTCTTATCAAGCCAGTTGATAATTTTCAT 1687

Qy      627
CACAAGGCCTCGCTCCAGGTCCAGCTGGATGCTGTCAACAAAAGGCTCCAGAAATAGAT 686
      |||  ||  |||||  |  |||  ||  ||| |  |  ||

Db      1686 TACA----CTTG-
TCCAGAATCTTCTGTTTGTCTCATCGTTAATCT----- 1645

Qy      687
TCTGCTCTTCAGTTTCATCTCTGAAATCATTTCATCAGTTAACCAACCAAAAGGCCAGCATC 746
      |||  |  ||||  ||||  |||  ||||  ||||  ||

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|||
Db      1644 --TGCCTTGAAGTT--TCTC----ATC-TTCAACAGTT-----
GCTTTCAT- 1608

Qy      747
GTGGATGACATTTCATTCCACCTTTGATGAGCTCCAGAAGACTTTAAATGTGCGCAAGAGT 806
      || || | |||                | ||||                ||||
|
Db      1607 GTTGAAGGCAT-----AGGACT-----
CAAGTGA 1584

Qy      807
GTGCTGCTTATGGAATTGGAGGTCAACTATGGCCTCAAACACAAAGTCCTCCAGTCGCAG 866
      | |                |||| | || |                ||||
Db      1583 ATTC-----TTGGATGACACCT-----
TGTC----- 1562

Qy      867 CTGGATACTCTGCTCCAGGGGCAGGAGAGCATTAAAGAGCTGCAGC----
AACTTCACAGC 922
      ||||| |                |||                || ||||                ||||
||||
Db      1561 -----CTCTGCTTCT-----CAT-----
CTTCAGCTTTGTACTTCTCAGC 1527

Qy      923
GCAGGCCCTCAACCATGGCACGGAGACCGAGGTCCTACTGGTGAAGAAGCAGATGAGCGA 982
      ||| |||| | | | | ||| | |
Db      1526 ----TTCCTGGACCAT---AC---
GTTCAATGTCTTCCT----- 1498

Qy      983 GAAGCTGAACGAGCTGGCCGACCAGGACTTCCCCTTG-
CACCCGCGGGGAGAACGACCAGC 1041
      ||| | | |                ||||| || | | | | |
|
Db      1497 -----TGCT---CAAACGG-----CCCTTGTCATTAGTGATAGTA-----
ATC 1463

Qy      1042
TGGATTTTCATCGTGGAACCGAGGGGCTGAAGAAGTCCATCCACAACCTCGGGACGATCT 1101
      | | | | |                ||| | |                ||||| | | ||| ||
Db      1462 TTGTTCTCTT-----TTCCCGT---ACTCTTG-----TCCACAGC--AGAGAC-
ATTG 1421

Qy      1102 TAACCACCAACGCCGTTGCCTCAGAGAC---
AGTGGCCACGGGCGAGGGGCTGCGGCAGA 1158
      |||| |                || ||| | |                |||| | |                ||| || |
|
Db      1420 AGTATACCATTG-----GCATCAATGTCAAAAGTGACTTC-----
AATCTGAGGAACA 1373

Qy      1159 CCATCATCGGGCAGCC-----CATGTCCGTCA--
CCATCACCACCAAGGACAAAGACGGT 1211
      ||                |||| | |                ||| | | |                ||||                | | |
|
Db      1372 CC----TCGGGGTGCAGGAGGTATGCCTGTGAGTTCAAACCTTGCCAAG---
CAGGTTGTT 1320

Qy      1212 GAGCTGTG-
CAAAACCGGCAACGCCTACCTCACCGCCGAAGTGAACCCCCGACGGGAG 1270
      || || | |                | ||                |||| | | | | | ||| | |||| | | | |

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CAGTTCTTCAA 867

Qy 1777  
GTGGGGACATAATCATTGCCGATTATGATAATAAATGGGTCAGCATTTTCTCCTCCGATG 1836  
| | | | | | | | | | | | | | | |

Db 866 TCGGGCACG-----GGTAATGGAGGTATAGAAGTCG-----  
ATTCTTCATAG 824

Qy 1837  
GGAAATTTAAGACAAAATTGGATCAGGAAAGCTGATGGGACCCAAAGGAGTTTCTGTGG 1896  
| | | | | | | | | | | | | | | |

Db 823 AGAGAATCGATCTCAATACTGGC-CTGGG---TGCTGG-----AAGAGAG-----  
GG 781

Qy 1897  
ACCGCAATGGGCACATTATTGTTGTGGACAACAAGGCGTGCTGCGTGTTTATCTTCCAGC 1956  
| | | | | | | | | | | | | | | |

Db 780 TACGC--TTAGCACGTT-----CACAAGCAGTACGGAG---  
GCGTCTTACAGC 738

Qy 1957  
CAAACGGGAAAATAGTCACCAGGTTTGGTAGCCGAGGAAATGGGGACAGGCAGTTTGCAG 2016  
| | | | | | | | | | | | | | | |

Db 737 -----TCTC-----TTGTTCTC-----ACTG-----  
AT 720

Qy 2017 GTCCCCATTTTGC---AGCTGTAAAT-  
AGCAATAATGAGATTATTATTACAGATTTCCAT 2072  
| | | | | | | | | | | | | | | |

Db 719 GTCCTTCTTATGCTTGCCTTAAACTCAGCAATAAAATGGTTGACCATTTCGTTGT-  
CAA 661

Qy 2073 AATCAT-TCTGTCAAGGTGTTTAATCAGGAAGGAGAATTCATGTTGAAGTTTGG--  
CTCA 2129  
| | | | | | | | | | | | | | | |

Db 660 AATCTTCTCCACCCAAGTG-----GGTGTCTCCA-  
GCTGTAGACTTGACCTCA 614

Qy 2130  
AATGGAGAAGGAAATGGGCAGTTTAATGCTCCAACAGGTGTAGCAGTGGATTCAAATGGA 2189  
| | | | | | | | | | | | | | | |

Db 613 A-----AGAT-----TCCATCCTCAATAG-TGAGGATT-----  
GA 585

Qy 2190  
AACATCATTGTGGCCGACTGGGGAAACAGCAGGATCCAGGTTTTTTGATGGGAGTGGATCA 2249  
| | | | | | | | | | | | | | | |

Db 584 CACATCAAAGTGCCACCT-----  
CCCAGGTCAAAGATGAGCACGTTTCT 540

Qy 2250  
TTTTTGTCCTACATTAACACATCTGCTGACCCACTCTATGGCCCCCAAGGCCTGGCCCTA 2309

|  
 Db 539 TTCTGCTCCAACCTT-----TTTG-----TCTAAG--  
 CCGTAAGCAATAGC---A 500

Qy 2310  
 ACTTCAGATGGTCATGTTGTGGTTGCAGACTCTGGAAATCACTGTTTCAAAGTCTATCGA 2369  
 | ||| ||| ||| ||| ||| ||| ||| |||

||  
 Db 499 GCAGCAGTTGG-----CTC-----  
 ATTAATAATTCTAAGTACATTGA 463

Qy 2370  
 TACTTACAGTAATGGTGGGCAGGTGGATACCCGCTTCCATGGTCTTGCCTATAAACTGG 2429  
 || ||| ||| | ||| ||| ||| ||| |||

|||  
 Db 462 GAC---CAGCAATAG-----TTCCAGCATCTTTGG--TAGC-CTG-  
 ACGCTGA 422

Qy 2430  
 AATGGATTTCTCAATGCGGGACCAGATTATGACTAGAGTTTTTATGCCAGAAGGAATCAT 2489  
 | ||| | ||| | | ||| | |||

|||  
 Db 421 GAGTCATTAAAGTAAGCTGGCACTG---TGACCA-----CAG-----  
 CAT 385

Qy 2490 TGGTGA---  
 ACTTTCCAAGGTTATTTCTGAATGTAACAATTTCTTAAAAATGACTTATC 2546  
 |||| | ||| ||||| | |||

|  
 Db 384 TGGTAACAGTCTTCCCAAGGT-----  
 AGGCTTCTG 355

Qy 2547  
 CAATTTCTGTATTTACCTTTAGGGTTAAAAAACTCTTCTACTGAATCTATAAAACT 2606  
 ||||| |||| || ||

Db 354 CAATTTCT-----  
 CTTTCATCTTTGTC----- 335

Qy 2607  
 GCAGTTTTACATCTGTGAACCTATGGCTTAAGGGACAGGATTTATGTAGCTAACTAATTT 2666  
 |||| || |

Db 334 -----  
 AGAACCATAG----- 325

Qy 2667  
 TGCAAATCAAACAGACACTTAAAAAACTAGCATATGTAAAGGTATTCGTTAATCCTGTG 2726  
 ||||| ||||

||  
 Db 324 -----AAGACAC-----  
 CTCCTCTG 310

Qy 2727  
 AATGGTAGCTTTTGCACAGAACTTCCAAAAGCAAAACAAAATCTATTGTAGTTA 2786  
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 Db 309 GATAGAAGCTTTTGGTC---TCTCCC-----  
 TTG 284

Qy 2787

TATACTTCATTTAACCTAGGTCACAAGACCCAGGGAATCTTCTAACCTCACTTTTACAGT 2846  
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 Db 283 TATTCTAC-TTGGACCTTGGGC-CTG---CCA--GCATCAT-TCACCAC-  
 CATAAAGGGC 233

Qy 2847  
 AGGTATTACTCTTGTGACATTTTTTTGGTTATCAACAATAAATAAATTACTTTGGAA 2906  
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 Db 232 CAATGTTTCATATCAGAC-----  
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Qy 2907  
 AAAGTAAGGCTGTCTTGCAAAATGATCCCAGCTCTGATTAGCAGCCCTCTGGAGTTTCTAGA 2966  
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 Db 193 -----CTG-CGT-----CCA-----  
 ATCAGACGTTTGGCATCAAAA 164

Qy 2967  
 ACTTAAGTATCAGTGCAAATTTCTCAACCTTTCTGGGTTAGACAAAGATCCTTTTTTTGTG 3026  
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 Db 163 ACT---GTGTTGGTG-----GGGTT---  
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Qy 3027 TGTTCCTTTTACCACCCCTTTGGC-  
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 Db 135 GATTCTTTGC-----GGCATCACC---GATCAACCG-----  
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Qy 3086  
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Qy 3146  
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Qy 3206  
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 Db 52 -----GCAATTATCTCGACTTTTC--  
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Qy 3266 CTTTACCTCCTGCAAATGTCAGCACATGTAGTAGG 3300  
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 Db 23 ----AACACCCACACAAGACC-----AGTAGG 1

RESULT 15  
 US-10-478-914-3/c  
 ; Sequence 3, Application US/10478914  
 ; Patent No. 7335755

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; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 3
; LENGTH: 2083
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-3
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Query Match          12.8%; Score 4899.5; DB 1; Length 2083;
Best Local Similarity 38.0%; Pred. No. 0;
Matches 1319; Conservative 0; Mismatches 729; Indels 1421;
Gaps 187;
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Qy          327
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Db          2083 CTAGCG-GCCGC--GACCTGCA----GCTCGAGCAC-ATGTGGCCTTTTT-----
TTTT 2038
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Qy          387
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TGGTTAG 2003
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Qy          447
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Db          2002 TCT--CCTACTATAAACA-----TGATTT-----TCCTTCTT-
CCC---- 1970
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Qy          507
CACGATGGGAATGTGATGGAATTTTACTGCCAGTCCTGTGAGACTGCCATGTGTCTGGGAG 566
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Db          1969 -----TTCAG--AGTCCTGT-----
CAAT----- 1953
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Qy          567
TGCACGGAGGGGGAGCACGCAGAGCACCCACAGTTCCACTCAAGGATGTGGTGGAACAG 626
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Db          1952 -----CTTTACTTTTTTTTCTCATTAAATAT-----
ACAG 1925
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Qy          627 CACAAGGCCTCGCTCCAGGTCCA-
GCTGGATGCTGTCAACAAAAGGCTCCCAGAAATAGA 685
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Db 1924 ----  
AAGTTATACTACAGATACATTCAAGCTCATGACTGCTAAAAACTTCCTGAAATG-- 1871

Qy 686  
TTCTGTCTCTTCAGTTCATCTCTGAAATCATTTCATCAGTTAACCAACCAAAAAGGCCAGCAT 745  
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Db 1870 ---AGC-----CTTAATTCATAC-----  
GAAT 1852

Qy 746  
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Db 1851 CAT-----TTCTA---TTTGTT---CT-----  
TTTTTTTTTTGAGACAGA- 1819

Qy 806  
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Db 1818 -----CTCTTACTC--  
TGTCGCCCAG----- 1800

Qy 866 GCTGGA-  
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Db 1799 GCTGGAGTGCACTG-----GCAT---GATCT-CGGC----  
TCACTGC-- 1766

Qy 925  
AGGCCCTCAACCATGGCACGGAGACCGAGGTCTACTGGTGAAGAAGCAGATGAGCGAGA 984  
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Db 1765 --AACCTCTGCCT---CAC-GAGTT--AGGTC-----  
AAGCAATT----- 1734

Qy 985  
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Db 1733 -----CT-----TCTGCCTCAGCCTCCCGAGG-----  
AGCTAG 1706

Qy 1044  
GATTTTCATCGTGAAACCGAGGGGCTGAAGAAGTCCATCCACAACCTCGGGACGATCTTA 1103  
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Db 1705 GATTAC-----  
AGGTCCCT----- 1692

Qy 1104  
ACCACCAACGCCGTTCCTCAGAGACAGTGGCCACGGGCGAGGGGCTGCGGCAGACCATC 1163  
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Db 1691 GCCACCA-----TGCCTGAGTAATTTTTGTATTTTTTAGTAGAGATGGGG-----  
TTTC 1644

Qy 1164  
ATCGGGCAGCCCATGTCCGTCACCATCACCACCAAGGACAAAGACGGTGAGCTGTGCAA 1223  
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Db 1334 GTTAA-----CAAATATGAACTAACAC-----  
CTACAATGTGCCA---- 1300

Qy 1760  
AGTGGCTGTACATCCCAGTGGGGACATAATCATTGCCGATTATGATAATAAATGGGTCAG 1819

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Db 1299 ---GGC-----  
ACCA----- 1293

Qy 1820  
CATTTTCTCCTCCGATGGGAAATTTAAGACAAAAATTGGATCAGGAAAGCTGATGGGACC 1879  
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Db 1292 ----TTCT-----AGGGAA---TAGAATGTAAATAAGTTCAAGTT--CT----  
TGACC 1253

Qy 1880  
CAAAGGAGTTTCTGTGGACCGCAATGGGCACATTATTGTTGTGGACAACAAGGCGTGCTG 1939  
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Db 1252 TGAATAAGTTT-----ACATTTTAGT-----  
GAGAAG 1226

Qy 1940  
CGTGTATTATCTTCCAGCCAAACGGGAAAATAGTCACCAGGTTTGGTAGCCGAGGAAATGG 1999  
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Db 1225 -----ACAGACAA-----  
TAAATCAATAACATGT----- 1202

Qy 2000  
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TTT 1183

Qy 2060  
TACAGATTTCCATAATCATTCTGTCAAGGTGTTTAATCAGGAAGGAGAATTCATGTTGAA 2119  
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|||  
Db 1182 TAAATGTCACAAAGAAAA-----AGGGGGAGCAATCAGATAG-----TGATG--  
GAA 1138

Qy 2120  
GTTTGGCTCAAATGGAGAAGGAAATGGGCAGTTTAATGCTCCAACAGGTGTAGCAGTGGA 2179  
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Db 1137 GTTACACTC---TAGAGAGGG---  
TGGACAGAAAAAGTTTCTCTTAGGAGATG----- 1091

Qy 2180 TTCAAATGGAAACATCATTGTGGCCGACTGGGGAAACAGCAGGATCCA---  
GGTTTTTTGA 2236  
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|||  
Db 1090 -ACATCTG--AACAGAGATCTAAATGACTGAGTACAAACC-----  
CCAATGGAAAAGTGA 1039

Qy 2237  
TGGGAGTGGATCATTTTTGTCCTACATTAACACATCTGCTGACCCACTCTATGGCCCCCA 2296  
| || ||| |||| ||| ||||| | | | ||| |||

Db 1038 TTGGTGTG-----TTGTGAAACAGCAACACAGC--





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GATTAATGATTCCCCCTTAGAAAGCAAGTGTTACCAAAGTTG 3417
      ||| | | | | | | | | | | | | | | | | |
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Db      267 TGGAGGCTTGTTATTTAAGGTTTCAATTTT----CTTGGAGTACA-----
TCCTTCAGAAG 217

Qy      3418
TGTTATCTTGAAAGCATTACAGGTAAGGGCATGTTATGGTTATTTATCATTGTTTAAATGA 3477
      | | | | | | | | | | | | | | | | | |
Db      216 TTCTTTC-----AGC-----AAGAAC---
TCATGTTTGTTAATCTTT----- 183

Qy      3478
ATAGTAGAGGTGTCAAGGGACTATGTATACATGATTAGGGTAAGATAGAATGTATTATAT 3537
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Db      182 -----GAGTC-----CTTGT-----TTCTGG-----
TGT----- 163

Qy      3538
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      | | | | | | | | | | | | | | | | | |
| |
Db      162 ---TTTAACTTTTTCCCCTCACTCT-----TGAGTAATAG-----
TTTAGCTGGG 121

Qy      3598 CAGCAC---
TCTGAAAGACAGAAGCTTCGTCCAGCCACTCTTCAGCACATTCCTTTACTA 3654
      | | | | | | | | | | | | | | | | | |
|
Db      120 CATAAAATTTTCAAGATTGGCAGTTACTT-----TTCCTTGGCAC-----
TACGA 78

Qy      3655 AGCAGTTTAAAGCCG-TCCTAGTGGAGCAAGC--
CCTAAAGCAGATTTAATTTTGGCCAT 3711
      | | | | | | | | | | | | | | | | | |
Db      77 AG-----ATGCCGCTCC-----
GTTATCTTATTACAGCCAATATTACTATTG---- 36

Qy      3712 TTTCCAAGAATGACGGTGGTGGCTTTTAGTCAGAAAATGGCCTTCTGTG 3760
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Db      35 -TTCC---TTTGTAGGTAATCTC-----CAGTA---GGCCAACAGTG 1

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Search completed: March 9, 2010, 15:52:48  
Job time : 29.9458 secs

GenCore version 6.3  
Copyright (c) 1993 - 2010 Bioceleration Ltd.

OM nucleic - nucleic search, using sw model

Run on: March 9, 2010, 15:51:16 ; Search time 1 Seconds  
(without alignments)  
1134.946 Million cell

updates/sec

Title: US-10-572-905-34  
Perfect score: 19464  
Sequence: 1 gcggcgcgcccgagcctagt.....taatttggtccggttaagga

3309

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 417 seqs, 79705 residues

Total number of hits satisfying chosen parameters: 834

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : 7335755.seq:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being  
printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
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1	6914.5	35.5	3210	1	US-10-478-914-4	Sequence 4,
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c 2	6808.5	35.0	3210	1	US-10-478-914-4	Sequence 4,
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3	6790.5	34.9	3589	1	US-10-478-914-21	Sequence 21,
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c 4	6758.5	34.7	3589	1	US-10-478-914-21	Sequence 21,
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5	5876	30.2	2437	1	US-10-478-914-61	Sequence 61,
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c 6	5713	29.4	2437	1	US-10-478-914-61	Sequence 61,
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c 7	5535.5	28.4	2495	1	US-10-478-914-20	Sequence 20,
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8	5468.5	28.1	2120	1	US-10-478-914-64	Sequence 64,
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9	5459	28.0	2495	1	US-10-478-914-20	Sequence 20,
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10	5299	27.2	2198	1	US-10-478-914-17	Sequence 17,
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c 11	5270.5	27.1	2336	1	US-10-478-914-57	Sequence 57,
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c 13	5132.5	26.4	2198	1	US-10-478-914-17	Sequence 17,
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14	5110.5	26.3	2336	1	US-10-478-914-57	Sequence 57,
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c 15	4714	24.2	2083	1	US-10-478-914-3	Sequence 3,
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c 19	4537.5	23.3	1946	1	US-10-478-914-62	Sequence 62,
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c 21	4104.5	21.1	1813	1	US-10-478-914-63	Sequence 63,
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23	2263.5	11.6	889	1	US-10-478-914-5	Sequence 5,
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24	2249	11.6	1020	1	US-10-478-914-68	Sequence 68,
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c 36	2078.5	10.7	909	1	US-10-478-914-67	Sequence 67,
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37	2066	10.6	839	1	US-10-478-914-16	Sequence 16,
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38	2054.5	10.6	717	1	US-10-478-914-42	Sequence 42,
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Appl						
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c 43	2023.5	10.4	811	1	US-10-478-914-37	Sequence 37,
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44	2007.5	10.3	909	1	US-10-478-914-66	Sequence 66,
Appl						
c 45	1997.5	10.3	820	1	US-10-478-914-39	Sequence 39,
Appl						

## ALIGNMENTS

## RESULT 1

US-10-478-914-4

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; Sequence 4, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
;   APPLICANT: NAKAGAWARA, AKIRA
;   TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
;   FILE REFERENCE: 7388-80899
;   CURRENT APPLICATION NUMBER: US/10/478,914
;   CURRENT FILING DATE: 2003-11-26
;   PRIOR APPLICATION NUMBER: PCT/JP02/05294
;   PRIOR FILING DATE: 2001-05-30
;   PRIOR APPLICATION NUMBER: JP 2001-162775
;   PRIOR FILING DATE: 2001-05-30
;   PRIOR APPLICATION NUMBER: JP 2001-255226
;   PRIOR FILING DATE: 2001-08-24
;   NUMBER OF SEQ ID NOS: 417
;   SOFTWARE: PatentIn version 3.2
; SEQ ID NO 4
;   LENGTH: 3210
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-478-914-4

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Query Match          35.5%;   Score 6914.5;   DB 1;   Length 3210;
Best Local Similarity 45.9%;   Pred. No. 0;
Matches 1677;   Conservative    0;   Mismatches 1161;   Indels   815;
Gaps   225;

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ACACGCAGGTGCTCTCTTAGTGCTCCCT 58

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Qy          119 G-GCCGA--GCCCCAGGAG-GCGGCGGGGGCGCAGGGGCGGCGGG-----
GGCCGTGC 167
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TTC 166

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Qy          168 CGG-----AGCCGCCCA---AGGAGGAGCAGCAGCAGGCC--CTGG--
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Db          167
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Qy 211 CGCCGCCG-CTGCAGCGCACAGCACCCCGGTGCGAGGGAGGTCACTGACAAGGA-  
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Db 227 CACACCCGACTGCA--TCACTGCCCTCCAAGTCTCTCCCTG-  
CCCTGTCCAGCATCCAGG 283

Qy 269 AGTTTGCTGCC-----AGGGCTGC----  
AAAACAGCTCGAATATCAGCAATTAGAAGAC 318  
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Db 284 A----GCACCCCTAGTTGGGAAGCTTCTGTGACTCCCCCTACAACAGC-  
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Qy 319 G-----ATAAACTTTCTCAGAAATCA-TCT---  
AGCAGTAAACTCTCTCGGTCTCCA 366  
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Db 339 GTGGGGTTTGTGAACAAATGCAGAAGGCAGTCTTAGGGAGGTGAGCTGACATG--  
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Qy 367 TTAAAGATTGTCAAAAAGCCTAAAAGCATGCAGT-  
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Db 396 -----TGGCCTGTGGCTGGGAAGTA-GCAGAGGCTAA--GGTTCTTCCC---  
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Db 442 TGGGGTTGCCAG-----  
GAGTAGCACTGGATCAGTCAGGTGACAGGGCTCTCCTCTCT 494

Qy 473 TTGATAAAGT---  
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Db 495 CTGAGCAGGTCCGGTGGCAGCCTTCAAGGTCGCC--  
ACGCCGTATTCCCTGTATGTCTGT 552

Qy 530 ATCGAGATGCTGAA-----AACCAGAAGAATTGGTTGGACCCTG----  
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TTGGGCCCTGTGGACAAAGGGC 610

Qy 577 ATAAAAAACAGGTTC-----GAAGTGGTGCTTGGCACTTTTCATTTAATGTG----  
AAA 627  
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Db 611 ACGATGTGACC--TTCTACAAGACGTGGTAC----  
CGCAGCTCGAGGGGCGAGGTGCAGA 664

Qy 628 TTTTATC---  
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CCAGGACCTTCACCTG 717



Qy 684  
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 Db 718 C-----ACCATGGAGGCCACCAGGCTG-CCAACACC-----  
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Qy 744  
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Qy 804 GAGCGATTACATTAGTGAGTTCCGCTTTGC---  
 ACCAAACCACACTAAAGAACTG----- 855  
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Qy 856 ---GAAGAC-----AAAGTGATCGAGCTGCACAA----GAGCCACAGAGG-  
 AATGACGCC 902  
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 Db 851 ACTGCTGCCTGGTGGTGGAGATCAGGCACCACCACTCGGAG-  
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Qy 903 A-----  
 GCAGAAGCAGAGATGCATTTCTTGGA---ATGCCAAAAATTATCAATGTATG 955  
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 Db 910 ATGGAGCTGCAGGTGCAGACAGGCA-----AAGATGC----  
 ACCATCCAACCTGTGTG 957

Qy 956  
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 GTAAGG----- 994

Qy 1016 CAAGTGGTCTGTTGATATATCGCGACCGGCTGCGAATAAACAGATTTGCCTGGCC--  
 CAA 1073  
 |||| | | |||| ||  
 Db 995 -----GACCAACCTC-----TTGCC--  
 CCTTTTG 1016

Qy 1074  
 GGTTCTAAAGATTTTCATACAAACGGAACAACCTTTTACATTAAGATCCGGCCGGGAGAGTT 1133  
 ||||| | |||| | | | | ||| || | ||| |  
 |  
 Db 1017 GGTTCT-CTGTTTTCTT-----CTGTCCTCATCCTGCACCCAGACCCTGTTTGG-  
 ACTC 1069

Qy 1134 TGAACAATTTGAAAGCACCATTGGGTTTAAGCTGCCAAACCATC-  
 GAGCTGCCAAGCGTT 1192  
 || | | |||| |||| || || || | || ||  
 |  
 Db 1070 TGGCCTCAT-----CACC-----CCAAGCCCTCAGAACCCCC---  
 CGGT 1105

[illegible]

Qy 1681 GAGCTAGAAAAA ACTCAAGATGACCTGATGAAACATCAAACCAACATTAGCGAGCTGAAA 1740  
|  
Db 1614 GAGCT-GCTTGAACCTGGGAGG--  
CAGAAGTTGCAGTGAGCCGAGATCACACCACTGCA- 1669

Qy 1741 AGAACCTTCTTAGAAACCTCAAC-AGACACTG--CCGTAA---CGAATGAA-----  
TGG 1788  
|  
Db 1670 --  
CTCCAGCCTGGGTGACAGAGCGAGACTCTGTCCCAAAAAATCAAAAAATCACTTTTG 1727

Qy 1789 GAGAAGAGGCTTTCCACCTCC----CCCGTGC--GAC-  
TGGCCGCCAGGCAGGAGGATGC 1841  
|  
Db 1728 GTAGAGATGCACTCTCGCTATGTTGCCAGGCTGGTCTTGAACCTCCTG-----  
GC 1778

Qy 1842 CCCCATGATCGAACCA-  
CTTGTCCCTGAAGAGAAAAATGGAAACCAAGACGGAGTCCAGTG 1900  
|  
Db 1779 TCAATTGATCTTCCCACCTTGACC-----TCCAA-----  
AGTGCTGGG 1816

Qy 1901 GATAGAGACGGAACCCACCGTGCACCACTGCCG-----CTT-----  
AGCACTGAGAAG 1949  
|  
Db 1817 ATTACAGGTGTGAGCCACCATGCCTAGCCT-  
CAGGGAATTCTTATAAGAACTCTATGAAG 1875

Qy 1950 GTGGTGCAGGAGACC-----GTGTTGGTGG-AGGAGCGGCGT-  
GTGGTGCACGCGA 1998  
|  
Db 1876 TAG--GCA--  
TCACCATCTTCTCTGTATCCATGGAAAGAGAGGCCTAGAGATGTATGCTA 1931

Qy 1999 GTGGGGATGC---TTCTTACTCGGC---GGGAGAC--  
AGCGGGGATGCTGCAGCACAGCC 2050  
|  
Db 1932 AC---TTGCCCAAGCTCACATAGCCCAGGGTAGCATAGCTGGGATGTTG-  
AGCTGAGGC 1986

Qy 2051 C-----GCATTACAGGCATTAAAGGGAAAGAGG--GCTCTGCTTGACG-  
GAG 2095  
|  
Db 1987 CGGAGGAGAAGTAGCAGTCGCTGGC----  
AGAGCACACAGGCTGCTCTGGGGGATGAGCT 2042

Qy 2096 GGGGC--TAAAGAGGAAGG--  
AGGGGAGGAGGTGCTAAAGCTGTCCTGGAACAGGAAGA 2151  
|  
|

Db 2043 GGTGCGTTTAAAGGAACAGGCCAGCACTGGCATTTCGC--AAGCAGT--  
GGGGAAGGGGAGA 2098

Qy 2152 GACAGCCGCTGCTTCCCGTGAGCGACAAGAGGAGCAGAGTGCAGCC-----  
ATC 2200  
|  
| | | | | | | | | | | | | | | | | |  
|  
Db 2099 GA-TGCCGAGGTG----GTCAGTATCCTGACTTTCAGAG----  
GCCTTTTTTTTGTGTTTGT 2149

Qy 2201 CACATTTTCAGAACTTTGGAACAAAAACCTCATTTTGA-  
GTCCTCAACGGTGAAGACGGA 2259  
| | | | | | | | | | | | | | | | | |  
|  
Db 2150  
TTAATTTTTGCTAGATTGATATTA AAAACTCATGTGGAGGA ACTCAAGGAATGTTTAGAA 2209

Qy 2260 AACCATCAGTTTTTGGCAGTGTTCACCGGGAGGAGTAAAGCTAGAAAT-----  
TTCCA 2312  
| | | | | | | | | | | | | | | | | |  
|  
Db 2210 GACCAAAAGTCCC--CAATG----ACAG---  
GAACAAAAGCAACCAATTTTAACTTTCT 2260

Qy 2313 CAAGAAGTGCCAGTAGTTCACACCGAAACCAAAACCATCACATATGAATCAT---  
CACAG 2369  
| | | | | | | | | | | | | | | | | |  
| | |  
Db 2261 CTTCTCATTCC---TGTTTTTCATTG-----ATTTC--  
CACATGTAGTCCTTTTGCTCAG 2310

Qy 2370 GTCG-----ATCCAGGCAC-----  
AGATCTGGAGCCAGGCGTGCTGATGAGTGC 2413  
| | | | | | | | | | | | | | | | | |  
| | | |  
Db 2311 GAAGTCTTTGGGGA AATTAAGGATCTTTGAAGCTCT-  
GAAATAGGTGATCAGGTTAGTG- 2368

Qy 2414 ACAGACGATCACATCTGAAACCACCAG--TACCACCACCACTACCCA----  
CATCACCA 2467  
| | | | | | | | | | | | | | | | | |  
| |  
Db 2369 -GTGTCTGT--CAGCTG--  
TCTAAGAGGTTGGAAAATGAACTACTCAAGATAGTCACGAA 2423

Qy 2468  
AACTGTGAAAGGGGGCATTTCAGAGACAAGAATTGAGAAGCGAATAGTCATCACGG---- 2523  
| | | | | | | | | | | | | | | | | |  
Db 2424 AATACTGAAAGTTTG-ATTTTTCTTTCCATATTTGA-----  
ATTAATTTTTTCTGTTTG 2476

Qy 2524 --GGGATGCAGACATTG---ACCATGACC-  
AGGCGCTGGCTCAGGCAATTAAAGAGGCC 2576  
| | | | | | | | | | | | | | | | | |  
Db 2477 ACTGGAAGGGGTTTTTGTATAACTAAAACCTCAGCGC-----  
ATAAAGGAGATT 2525

Qy 2577 AAAGAGCAGCACCTGACATGTCAGTGACCAAAGTAGTGGTCCATAAAGAGAC-  
AGAGAT 2635  
| | | | | | | | | | | | | | | | | |

|||||  
Db 2526 TAAAAGGAGCA-CATGATTT---AGTG-----GGTGGGCCAT---  
GAAACTAGAGAT 2570

Qy 2636 CACACCAGAAGATGGAGAGGA--  
TTGACCAGAGGAATAACTTAGCTTGACATGAATGCA 2693  
| | ||| | || ||| | |||| | || | |||

||  
Db 2571 -----GGGATTTGGGGGTGAATTTGTC-----AATATC-----  
TGGATTTTAATCCA 2612

Qy 2694 GTCA----TGCAAAC---  
CGTTAGGAAAACCAGAGCCTATATGGAGTTCCTCTTCTAAC 2746  
| || ||| ||| | || ||| | || | ||| ||| |

||  
Db 2613 GACATCTCTGCTAACGAGCCTTTGGTAAGTCACTTCAGATAC--  
TTTTCTCCTTTTAC 2670

Qy 2747 CCA-----  
ACTGTACTTGTATCTGTCCGTGGAAAATTTTCAGTCCAGAAGAATTGACCTT 2800  
| ||| ||| | || | || |||| | |||| |

Db 2671 AAAGAGAGGGCTGGCTTAGTTATTTGCCAAAGCCCCTTCCAGGCC---  
TGAATTCCACAA 2727

Qy 2801 GACC--ATTAATAAAGACACTGGCAGAGAGATCTTCC----CATAATA-----  
AAGCAAT 2849  
| | ||| | || || | | |||| | || |||| ||||

|  
Db 2728 GTACGATTTACTGTAG----  
TGTCTTATCACTCTTTCATGTACAATAGCGTGGAGCATT 2783

Qy 2850 CTGATTTCAGCATCACTAAACCGATAATGCATGA-  
AGCAACGATAAAATTACAAAAGAGCA 2908  
| || ||| || || | ||| ||| | | |||| |

|  
Db 2784 AGAGAAAAGC----CTAGACTTTTAGT---TGATAGCCA-  
GTTGAAATATCATTGAT--A 2833

Qy 2909 GCATTTTTTAATTTTCACAAAATGTCTCAGTTTTTC-AGC--  
TATACCTGCTCGTTTCATAAC 2965  
| |||| | || |||| | | |||| || || | | |

Db 2834  
GAATTTTAGTTTTAGGAAAAATTGGTTTGATTTCTAGCTTTATTACTATTAGGT----- 2887

Qy 2966 CAACAATATAAACCGTGGTCTCATGTAACACATAAACAAT---TCATGCCTT-  
TCATAGT 3021  
|| | | ||| | || | || || | | || | || || |

Db 2888 -----ATGTGAGCT-TGGGCAAAT-----  
CGCTTAATCTTTGAGTCTAGTTTTCTCTCAA 2937

Qy 3022 TTATTATTATTAAAGTCTAAA-----CAAATTGCAATT--  
TCTTAGGTAACCTTATA 3072  
| | ||| || |||| | | || || | || || |

|||  
Db 2938 ATGAGAACATT--  
AGGCTAAATGATTTCCGAGTTTCCAGCTAGTCCTAGAGTTCTATATT 2995

Qy 3073 TTTACAATAAATGA---AGATTACCCT-CAAATGCT--  
AGAAGCTGTCTAGGTCCGTCCG 3126  
| ||| ||| ||| | ||| | | |||| ||| || ||| ||| |

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|
Db      2996 TCTAC-ATAGTTGAATTATTTTATCATGCTGTTGCTGGGGAATATGACTA-
ACCCTTTTG 3053

Qy      3127 GTGTGTCAGATTTCC--TC-AGATTAGATGTGCCAATAACCAAGTT-
TATTCAGTAAACA 3182
          |   |   ||||   || || ||   || |   ||||   || |   |||| |||

|
Db      3054 AAGCTACTAATTTTATGTCGAGCTTTAAAGT--CCATAA--
TTGTTATCTTCAGAAAATA 3109

Qy      3183 --ACTTGTACT----TGTTTC--
ATCTGGTTTATTACTCTCACCCATAAACAGTAATGA 3233
          |   |||   ||   |   || |   |||   |||| ||   || |   |||| ||

|
Db      3110 TTATTTGACCTACAGTATGTCCAAATC-
AATTTAATAAAATCGCTTTATAACAGGAAAAA 3168

Qy      3234 CTCTCTGACCCTCTGGAAATATGTAATGCTTCCAATCTTGCTTTGTGTATCTC 3286
          |           ||| |   || || |   ||||   |||
Db      3169 AAAAAAAAAAAAAAAAAAAAAAAAAAAGGCCAC-----ATGTG---CTC 3208

```

# RESULT 2

```

US-10-478-914-4/c
; Sequence 4, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 4
; LENGTH: 3210
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-4

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Query Match      35.0%; Score 6808.5; DB 1; Length 3210;
Best Local Similarity 44.2%; Pred. No. 0;
Matches 1634; Conservative 0; Mismatches 1170; Indels 895;
Gaps 222;

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```

Qy      5 CGCGCCCG---AGCC-----
TAGTCCCCACGCCGCGGCG 35
          || || |   |||           |   ||

|||
Db      3209
CGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTTTTTTTTTTTCTGTTATAAAGCG 3150

Qy      36 C-----GCCCGGGCTCCCTGCTGATCCCAACAATCAACCATGACG--

```

ACC 80

Db 3149 ATTTTATTAAATTGATTGGACATACTGTAGGTC---  
AAATAATATTTTCTGAAGATAAC 3093

Db 3092  
AATTATGGACTTTAAAGCTCGACATAAAATTAGTAGCTTCAAAAGGGTTAGTCATATTCC 3033

Db 2978 --CTAGCTGGAACTCGGAAATCATTTAGC-----CTAATGTTCTCA-----  
TTTTG 2934

Db 2933 AGAGAAACTAGACT--CAAAGATTAAGCGATT--  
TGCCCAAGCTCACATACCTAATAGT 2878

Db 2877 AATAAAGC---  
TAGAAATCAAACCAATTTTTCTCTAAACTAAAATTCTATCAATGATATT 2821

Db 2820  
TCAACTGGCTATCAACTAAAAGTCTAGGCTTTTCTCTAATGCTCCACGCTATTGTGACAT 2761

TGAACTTGCTAGAGAAAGACTACTTTGGGCTTACGTATCGAGATGCTGAAAACCAGAAGA 553  
 |||| | || |||| | | | | | | | | | |  
 Db 2649 TGAAGTGA CTTACCAAAGGCT-CGTT-AGCAGAGATGTCTGGAT--  
 TAAATCCAGA--T 2596

Qy 554 ATTG----GTTGGACCCTGCTAAGGAAATAAAAAACAGGTT-----  
 CGAAGTGG 599  
 |||| | | || | | |||| | | | | | |  
 Db 2595 ATTGACAAATTCACCCC--C-----  
 AAATCCCATCTCTAGTTTCATGGCCCACTAA 2543

Qy 600 TGCTTG-GCACTTT-----TCATTTA----ATGTGAAATT--  
 TTATCCACCAGACCCT 645  
 | | | | | | | | | | | | | | | |  
 ||||  
 Db 2542  
 ATCATGTGCTCCTTTTAAATCTCCTTTATGCGCTGAGGTTTTAGTTATACAAAACCCCT 2483

Qy 646  
 GCCCAACTATCTGAAGATATCACCAGGTACTACCTCTGCTTGCA GTTGCAGATGACATC 705  
 || | | | | | | | | | | | | | | | |  
 Db 2482 TCCAGTCAAACAGAAAAATTA----  
 ATTCAAATATGGAAGAAAAATCAAAC TTTCAGT 2427

Qy 706 GTGTCCGGAAGGCTGCCCTGC-----TCCTTTGTTACCCTGGCCTT-----  
 GCTGGGCTC 755  
 | | | | | | | | | | | | | | | |  
 Db 2426 ATTTTCG--TGACTATCTTGAGTAGTTTCATTTTCCAACCT---  
 CTTAGACAGCTGACAGA 2372

Qy 756 CTACACTGTCCAG-----TCAGAGC-TCGGAGA--CT--  
 ATGACCCAGATGAATG 800  
 | |||| | | | |||||| | | | | | | | |  
 |  
 Db 2371  
 CACCACTAACCTGATCACCTATTTTCAGAGCTTCAAAGATCCTTAATTTCCCCAAAGACTT 2312

Qy 801 TG GGAGC-----  
 GATTACATTAGTGAGTTCCGCTTTGCACCAAACCACACTAAAGAACTG 855  
 |||| | | |||| | | | | | | | | | |  
 Db 2311 CCTGAGCAAAGGACTACATGTGGGAAAT-----CAATGAAAAC--  
 AGGAATGA 2265

Qy 856 GAAGACAAAGTGATCGA---GCTGCACAAGAGCC--ACAGAGGAATGAC-----  
 GCCAGC 905  
 |||| | |||| | | | | | | | | | | | |  
 |  
 Db 2264 GAAGAGAAAGTTAAAAATTGGTTGCTTTTGTTCCTGTCAATTGGG--  
 GACTTTTGGTCTTC 2207

Qy 906 AGAAGCAGAGATGCATTTCTTGAAAAATGCCAAA-----  
 AAATTATCAATGTATGGGG 958  
 | | |||| |||| ||| | | |||||| | |  
 |  
 Db 2206 TAAA-----CATTCCTTGAGTTCCTCCACATGAGTTTTTAATATCAATCTA---  
 GC 2159

Qy 959 TAGATTTACATCATGC----  
 TAAGGACTCAGAAGGGGTAGAAATTATGTTAGGAGTTTGT 1014  
 | | || | | | |||| || | | | | | |



||  
 Db 2158 AAAAATTAAACAAACAAAAAAGGCCTCTGA-----  
 AAGTCAGGATACTGA 2112

Qy 1015 GCAAGT-  
 GGTCTGTTGATATATCGCGACCGGCTGCGAATAAACAGATTTGCCTGGCCCAA 1073  
 || | || | | || | || | || || || | || || | ||

Db 2111  
 CCACCTCGGCATCTCTCCCCTTCCCCACTGCTTGCGAATGCCAGTGCTGGCCTGTTTCCTT 2052

Qy 1074  
 GGTTCCTAAAGATTTTCATACAAACGGAACAACCTTTTACATTAAGATCCGGCCGGGAGAGTT 1133  
 | | | || | | || | || | | | | | | | | | | |

Db 2051 -AAACGCACCAGCTCAT-CCCCAGAGCAGC-----CTGTGTGCTCT-GCC---  
 AGCGAC 2003

Qy 1134 TGAACAATTTGAAAGCACCATTGGGTTTAAGCT-GCCAAACCATCGA-  
 GCTGCCAAGCGT 1191  
 || | | || | || | || | || | || | || | | | |

Db 2002 TG--CTACTT-----CTCC-  
 TCCGGCCTCAGCTCAACATCCCAGCTATGCTACC----- 1957

Qy 1192 TTATGGAAAGTATGTG-TTGAGCAT-----CATACATTTTTTCAGACTACTGTTACCA-  
 GA 1244  
 || | | | || | || | || | || | || | || | || |

|  
 Db 1956 --CTGGGCTATGTGAGCTTGGGCAAGTTAGCATAACATCTCTAGGCCT-  
 CTCTTTCCATGG 1900

Qy 1245 AGCACCTCCCAAGAA-----ATTCTTA--ACCTTGGGTTC----  
 CAAGTTTTCGTTATA 1291  
 | | | || | || | || | || | || | || | |

Db 1899 A-----  
 TACAGAGAAGATGGTGATGCCTACTTCATAGAGTTCTTATAAGAATTCCCT--- 1848

Qy 1292 GTGGCAGGACAC--  
 AAGCGCAAACGAGAAGAGCCAGTGCGTTGATAGATCGCCCAGCACC 1349  
 | || | || | || | || | || | || | || | ||

Db 1847 GAGGCTAGGCATGGTGGCTCACACCTGTAATCCCAGCACTTTGG-  
 AGGTC----- 1799

Qy 1350 TTACTTTGAACGCTCAT-----CCAGCAAACGTTATACCATGTCTCGCAGCTTGG---  
 AT 1401  
 | | | | || | || | || | || | || | || | ||

|  
 Db 1798 -AAGGTGGGAAGATCAATTGAGCC--CAGGAGTT----CAAGAC---  
 CAGCCTGGGCAAC 1749

Qy 1402 GGAGCATCAGTGAATGAAAACC--  
 ATGAAATATACATGAAGGATT-----C 1445  
 || | || | || | || | || | || | ||

|  
 Db 1748  
 ATAGCGAGAGTGCATCTCTACCAAAGTGATTTTTTTTGATTTTTTGGGACAGAGTCTCGC 1689

Qy 1446 TATGTCTGC-----  
 TGCAGAGGTTGGTACTGGCCAGTACGCCACAACAAAAGGCA 1495  
 | || | | || | || | || | || | || | || |

Db 1688 TCTGTACCCAGGCTGGAGTGCAGTGGTGTGATCT---  
 CGGCTCACTGCAACTTCTG--- 1635

Qy 1496 TCTCTCA-GACCAACTTGATCACC--  
 ACTGTGACTCCGGAGAAGAAGGCTGAGGAGGAGC 1552  
 ||| || | ||| | || | || | ||| ||| || || ||

Db 1634  
 CCTCCCAGGTTCAAGCAGCTCTCATGTCTCAGCCTCCCGAGTAGCTGGGATTACAGATGC 1575

Qy 1553 GGGACGAGGAAGAGGACAAACGGAGGAAGG-----  
 GGGAAGAAGTCACGCCCATCTC 1604  
 || | | ||| || | | ||| ||| ||| |||

Db 1574 CTGCCACCATGCCAGGCAAATTTTGGGTTGTTTTTTTTTGGAGATGGAGTCTTGCTC-  
 TATC 1516

Qy 1605  
 GGCCATCCAGCAGGAGGAAAGACTGACAGTGAGCGCACGGACACCGCAGCCGACGGGGA 1664  
 | | || ||| | |||| || || | | || | |

Db 1515 AG---CAGGCTGGAGTG-----CAGTG---  
 GCGCGATCTCGGCTCACTGC----- 1477

Qy 1665  
 GACCACTGCCACTGAGGAGCTAGAAAAAACTCAAGATGACCTGATGAAACATCAAACCAA 1724  
 ||| ||| || || || || || || || || || || ||

Db 1476 AACCTCTGACTCCCGGGTTCAAG-CGATTCTCTTG---CCT-----  
 CAGC----- 1436

Qy 1725 CATTAGCG-AGCTGAAAAGAACCTTCTTAGAAAC-  
 CTCAACAGACACTGCCGTAACGAAT 1782  
 | | | |||| | || | | | | ||| ||| ||| |||

Db 1435 CTCTTGAGTAGCTGGGA-----CTAC----AGGCGCGCACC--ACCATGCC-  
 TGGCTAAT 1388

Qy 1783 GAATGGG-----AGAAGA----GGCTTTCCACCT-----  
 CCCCCGTGCGAC 1819  
 || | || ||| || |||| ||| |||| |||

Db 1387 TTTTGTGTTTTTAGTAGAGATGGGGTTTCACCCTGTTGGCCAAGAGGACCCCC---  
 AGCC 1331

Qy 1820 TGGCC--GCCA-----GGCAGGAGGATGCCCCCATGATCGAACCACTTGTC--  
 CCTGAAG 1870  
 | || |||| || || || || | || |||| | ||||

Db 1330 TTCCAAGCCATAGGGGGCTGGTGG--GC-----AGGGCGG--  
 CACTTAGCTGCCTG--- 1283

Qy 1871  
 AGAAAATGGAAACCAAGACGGAGTCCAGTGGATAGAGACGGAACCCACCGTGCACCAC-- 1928  
 || ||| || ||| || || | || ||| ||| ||| |||

Db 1282 -----GGGCACCCAGTACCTGTTCATGAGGCACTTGCCCTGGCCAAAGGT-  
 CACTGCCA 1231

Qy 1929 -----CTGCCGCTTAGCACTGAGA---AGGTGGTGCAG-GAGACC-  
 GTGTTGGTGGAGGA 1978  
 | ||| || | |||| | | || |||| || || | | ||||

Db 1230 AGGCACAGCCACT----  
 CCAGAGAGTCAAGAGGAGCAGAGACTCCAGAGCAGATGGA--- 1178

Qy 1979 GCGGCGTGTGGTGCACGCGAGTGGGGA-

TGCTTCTTACTCGGCGGGAGACAGCGGGGATG 2037  
 || | |||| | | ||||| || | | | | | |  
 |||||  
 Db 1177 -AGGAGAGTGG-----GCTTCTGGGGATTGC----ACCAAGGAGGAAG-  
 CAGAAGGGATG 1129  
  
 Qy 2038  
 CTGCAGCACAGCCCGCATTTCACAGGCATTAAAGGGAAAGAGGGCTCTGCTTGACGGAGGG 2097  
 ||||| | | |||| | | || | |||||  
 |||  
 Db 1128 -TGCAGCA-----GCAGAAAAGG--AGGAGGAC-----  
 CGGGGGG 1097  
  
 Qy 2098 GGCTAAAGAGGAAGGAGGGGAGGAGGTCG-----  
 CTAAAGCTGTCCTGGAACAGGAAGA 2151  
 | | | | | | | | | | | | | | | | | | | |  
 ||  
 Db 1096 TTCTGA--  
 GGGCTTGGGGTGATGAGGCCAGAGTTCCAAACAGGGTCTGGGTGCAGGATGA 1039  
  
 Qy 2152 GACAGCCGCTGCTTCCCGTGAGCGACAAGAGGAGC-AGAG--  
 TGCAGCCATCCACATTTT 2208  
 | | | | | | | | | | | | | | | | | | | |  
 ||||  
 Db 1038 G--GACAGAAGAAAACAGAGAAC-CCAAAAGGGGCAAGAGGTTGGTCCCTTAC---  
 TTTC 985  
  
 Qy 2209  
 AGAAACTTTGGAACAAAAACCTCATTTTGTAGTCCTCAACGGTGAAGACGGAAACCATCAG 2268  
 | | | | | | | | | | | | | | | | | | | |  
 Db 984 ACTCTCCTGGGAGGAGGA-----TGGGTACACCACACAGTTGGATGGTG-  
 CATC-- 937  
  
 Qy 2269  
 TTTTGGCAGTGTTCACCGGGAGGAGTAAAGCTAGAAATTTCCACAAGAAGTGCCAGTAG 2328  
 |||| | | | |||| | |||| | | | | | | | | | |  
 Db 936 -TTTGCCTGT-CTGCACC-----TGCAGCT--CCATGGCACCATG--  
 GACCCTGT-- 893  
  
 Qy 2329 TTCACACCGA-----AACC--AAAACCATCACATATGAATCATCACAGGTCG--  
 ATCC 2377  
 | |||| | | | ||||| | | | | | | | | | |  
 ||||  
 Db 892 ---GCTCCGAGTGGTGGTGCCTGATCTCCACCACC-  
 AGGCAGCAGTAGAGGCCGCTATCC 837  
  
 Qy 2378 AGGCACAGATCTGGAGCCAGGCGTGCTGATGAGTGACAGACGATCACA-----  
 TCTGA 2431  
 | || | | | | | | | | | | | | | | | | | | |  
 ||  
 Db 836 A-GCA-GGGTCAGGTTGC--GCATGGTGATGG-----  
 AGAAGTTGCCATGGTGGTCGGA 787  
  
 Qy 2432 AACCACCAGTACCACCACCACTACCCACATCACAAAACCTGTGAAAGG---  
 GGGCATTTT 2488  
 || | | | | | | | | | | | | | | | | | |  
 Db 786 GGCC-----GACTCCAGCCCGTGGCGCTGAGCCAGGTC-  
 GTGGCTGGTGTGGCAGCCT 734  
  
 Qy 2489 AGAGACAAGAATTGAGAAGCGAATAGTCAT--CACG-

GGGGATGCAGACATTGACCATGA 2545  
 |||  
 Db 733 GGTGGCCTCCATGGTGCAGGTGAAGGTCCTGGAACGTGAGGTTGCGG-----  
 ATGG 683

Qy 2546 CCAGGCGCT-GGCTCAGGCAATTAAAGAGGCCAAAGAGCAGC---  
 ACCCTGACATGTCAG 2601  
 ||||| | ||| | | || | || | || |  
 Db 682  
 GCCGGCGCTCTGAGCAGGTCTGCACCTCGCCCCTCGAGCTGCGGTACCACGTCTTGTAGA 623

Qy 2602 TGACCAAAGTAGTG-----  
 GTCCATAAAGAGACAGAGATCACACCAGAAGATGGAGAGG 2655  
 | || | ||| ||| | || | | || | | || |  
 |  
 Db 622 AGGTCACA-TCGTGCCCTTTGTCC--ACAGGGCCCAAGAGC-  
 CTGCAGGTGAGGGTGACG 567

Qy 2656 AT-  
 TGACCAGAGGAATAAAGTCTGACATGAATGCAGTCATGCAAACCGTTAGGAAA 2714  
 | || | || | | | || | || | | || | |  
 Db 566 TTCTGCCCCTCGGGACA----GACATACA-GGGAATACGG-  
 CGTGGCGACCTTGAAGGCT 513

Qy 2715 ACCA--GAGCCT-----  
 ATATGGAGTTCCCTCTTCTAACCCTACTGTACTTGTATCTG 2765  
 ||| | ||| ||| || | | ||| ||| | ||  
 ||  
 Db 512 GCCACCGGACCTGCTCAGAGAGAGGAGAGCCC---TGTCACCTGACTGATCCAGTG-  
 CTA 457

Qy 2766 TCCGTGGAAAATTTTCAGTCCAGAAGAATTGACCTTGACCATTAAATA-----  
 AAGACACTG 2820  
 | ||| || || | | | |||| || | || | |||  
 |  
 Db 456 CTCCTGGCAAC-CCCAGAGCGG--  
 GGAAGAACCTTAGCCTCTGCTACTTCCCAGCCACAG 400

Qy 2821  
 GCAGAGAGATCTTCCCATATAAAGCAATCTGATTCAGCATCACTAAACCGATAATGCAT 2880  
 || | | || | | ||| | || ||| | |||  
 |  
 Db 399 GCCAGGGG-----CAT-----GTCAGCTGA-----CCTCCCTAAGAC-----  
 TGCCT 363

Qy 2881  
 GAAGCAACGATAAAATTACAAAAGAGCAGCATTTTTTAATTTTCACAAAATGTCTCAGTTT 2940  
 | |||| | |||||  
 Db 362 -----TCTGCATT-----  
 TGTTACAAA----- 345

Qy 2941  
 TCAGCTATACCTGCTCGTTTATAACCAACAATATAAACCGTGGTCTCATGTAACACATAA 3000  
 || ||| ||| || || | || || | |||  
 ||  
 Db 344 -----CCCCACTC---CAT--CC-----  
 TAGGCTGTTGTAGGGGGAGTCACAGAA 305

Qy 3001 ACAATTCATGCCTTTTCATAGTTTATTATT--

ATTAAAGTCTAAACAAAATTTGCAATTTCT 3058  
||  
Db 304 GC--TTC---CCCAACTAGGGGTGCTCCTGGATGCTGGACAGGGCAG----  
GGAGAGACT 254  
Qy 3059  
TAGGTAACCTTATATTTACAATAAATGAAGATTACCCCTCAAATGCTAGAAGCTGTCTAGG 3118  
|  
Db 253 TGGAGGGCAGTG---ATGCAGTC---GGGTGTGTCCCTC--TTCCCAGTAG-  
AGTATATG 203  
Qy 3119 TCCGTCCGGT---  
GTGTCAGATTTCCCTCAGATTAGATGTGCCAATAACCAAGTTTATTCA 3175  
||  
Db 202 CAAAACCTGTTGGGTGGGAGG-----CAGGTTGGG-  
GAGCAGGAAGGCTGTTTCGAACA 150  
Qy 3176  
GTAAACAACTTGTA CTGTTTCATCTGGTTTATTACTCTCACCCATAAACAGTAATGACT 3235  
| | | | | | | | | | | | | | | | | | | | | |  
Db 149 G-CAGCTCCTTGTCCTTGCCGCTCTG-----  
TAGGGGCCATCAACA-----C 108  
Qy 3236 CTCTGACCCT-----CTGGAAATATGTAATGCTTCCAAT-  
CTTGCTT----- 3276  
| | | | | | | | | | | | | | | | | | | | | |  
Db 107  
CTCTGCCCCTTCCTACTCCTAGGACTGAACATGCCTTCCCATCCTTGCCAGGGAGCACTA 48  
Qy 3277 --TGTGTATCT-CATTTAATT---TGTTCCGGTTAAGG 3308  
| | | | | | | | | | | | | | | | | | | | | |  
Db 47 AGAGAGCACCTGCGTGTGCAAGGCCTGGGCCAGT--AGG 11

Query Match 34.9%; Score 6790.5; DB 1; Length 3589;  
Best Local Similarity 44.7%; Pred. No. 0;  
Matches 1717; Conservative 0; Mismatches 1297; Indels 825;  
Gaps 216;

Qy 1 GC-----GGCGCGCCCAGCCTAGTCCCCACGCCGCGGCGCGCC---  
CGGGCTCCCTG- 50  
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|||||  
Db 1 GCCTACTGGATTTCGCC--  
ATCATTTTGCACACTGCGAGGGGCTCCGTGTGTGCGCCCTGT 58

Qy 51 CTGATCC--  
CAGAACAAATCAACCATGACGACCGAATCTGGATCAGACTCGGAATCCAAGC 108  
| | | | | | | | | | | | | | |

|  
Db 59 CTTGTCTGGCCGTCC--TCATCCCTTCCCCCACCCCCTG---CCGCCAC----  
TCCGACC 109

Qy 109 CGGACC--AGGAGGCCGAGCCCCAGGAGGCGG-  
CGGGGGCGCAGGGGCGGCGGGGGC--C 163  
| | | | | | | | | | | | | | |

|  
Db 110 CGCTCCCAAAGTGGCT---TCACAATAGTCGGTC-----CTC---  
GGCGGTGTAGGCTGC 158

Qy 164  
GTGCCGGAGCCGCCCAAGGAGGAGCAGCAGCAGGCC----- 200  
| | | | | | | | | | | | |

Db 159  
GCACCAGGTCCACACTTAAGCGAAATCAAGGAGACCCCTTCTACTTCTACCTTTGGGTT 218

Qy 201 TGGAG--CAGTTCGCCGCCGTGCAGCGCACAGCACCCCGGTGCGAGGGAGGTCA--  
CTG 256  
| | | | | | | | | | | | | | |

|  
Db 219 TGGTGCTCAATGCGAAGCTGCTGCAACTCAGA-CACGCC----  
TAAGTCAACTCATGCAG 273

Qy 257  
ACAAGGAACAGGAGTTTGTGTCAGGGCTGCAAAACAGCTCGAATATCAGCAATTAGAAG 316  
| | | | | | | | | | | | | |

||  
Db 274 AAAAAGGAGAAAAGTTT-----TGGTATACAAA--TGCTCTCAGTCCAGC-----  
CAG 319

Qy 317 ACGATAAACTTTCTCAGAAATCATCTAGCAGTAAAC-----TCT---  
CTCGGTCTCCAT 367  
| | | | | | | | | | | | | |

Db 320 ACACCAAGC---  
CGAAAGGTTGTGCTGGCTGCAACCGAAAGATCAAGGACCGGTATCTTC 376

Qy 368 TAAAG---ATTGTCAAAAAGCCTAAAAGCATGCAG--TGC--  
AAAGTGATACTTCTCGAT 420  
| | | | | | | | | | | | | |

Db 377 TAAAGGCACTGGACAAA-----  
TACTGGCATGAAGACTGCCTGAAGTGTGCCTGC----- 426

Qy 421 GGATCAGAATATACCT--GTGATGTAGAGAAACGCTCCAGAGGACAAGTGTGT--

TGAT 477  
 ||  
 Db 427 ---TGTGACTGTCGCTTGGGGGAGGTGGGCTCCAC-  
 CCTGTACACTAAAGCTAATCTTAT 482  
 Qy 478  
 AAAGTGTGTGAACACTTGAACCTGCTAGAGAAAGACTACTTTGGGCTTACGTATCGAGAT 537  
 ||  
 Db 483 CCTTTGT-----CGCAGAGACTATCT-----GAGGCT-CTTTGG-----  
 TGTAACGGGAA 526  
 Qy 538 GCTG-AAAACCAGAAGAATTGGTTGGACCCTGCTAAGGAAATAAAAAAAC-----  
 AGG- 589  
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 Db 527 ACTGCGCTGCCTGTAG--  
 TAAGCTCATCCCTGCCTTTGAGATGGTGATGCGTGCCAAGGA 584  
 Qy 590 -----TTCGAAGTGG--TGCTTGGCACTTTTCA----  
 TTTAATGTGAAATTTTATCCA 636  
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 Db 585 CAATGTTTACCACCTGGACTGCTTTGCA--  
 TGTCAGCTTTGTAATCAGAGATTTTGT--- 639  
 Qy 637 CCAGACCCTGCCCAACTAT--  
 CTGAAGATATCACCAGGTACTACCTCTGCTTGCAGTTGC 694  
 |  
 Db 640 ---GTTGGAGACAAATTTTTCTAAAGA-ATAACATGAT----CCTTTGC---CAG--  
 AC 686  
 Qy 695 GAGATGACATCGTGTCCGG-----  
 AAGGCTGCCCTGCTCCTTTGTTACCCTGGCCTT 746  
 ||  
 Db 687 G----  
 GACTACGAGGAAGGTTTAAATGAAAGAAGGTTATGCACCCCAGGTTTCGCTGATCT- 741  
 Qy 747 GCTGGGCTCCTACACTGTCCAGTCAGAGCTCGGAG-  
 ACTATGACCCAGATGAATGTGGGA 805  
 ||  
 Db 742 ----ATCAACATCAC--CCCATTAAGAATACAGAGCACTACATTCT--  
 TTTATCTTTTTT 793  
 Qy 806 GCGATTACATTAGTGAGTTCCGCTTTGCACCAAACCACACTAAAGAAC-----  
 TGGA 857  
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 Db 794 GC---  
 TCCACATGTACATAAGAATTGACACAGGAACCTACTGAATAGCGTAGATATAGGA 850  
 Qy 858 AGACAAAGTGAT-----  
 CGAGCTGCACAAGAGCCACAGAGGAATGACGC 901  
 |  
 Db 851 AGGCAGGATGGTTATATGGAATAAAAGGCGGACTGCATCTGT-  
 ATGTAGTGAAATTGCC 909

Qy 902 CAGCAGAAGCAGAGATGCATTTCTTGGAAGATGCCAAAAATTATCAATGTATGGGGTAG 961  
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 |  
 Db 910 CAGTT----CAGAGTTGAATGTTTATTATTAAAGAAAAAGTAATGTACATAT-  
 GGCTGG 964

Qy 962 ATTTACAT-CATGCTA-----AGGACTCAGAAGGGGT-  
 AGAAATTATGTTAGGAGT-T 1011  
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 Db 965 ATTTTTTTTGCTTGCTATTCGTTTTTGTGTCACTTGGCATGAGATGTTTATTTTGGACTAT 1024

Qy 1012 TGTGCAAGTGGTCTGTTGATATATCGCGACCGGCTGCGAATAAACAGAT---  
 TTGCCTGG 1068  
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 Db 1025 TGTATATAATGTATTGTAATATTTGAAGCACAAATG---  
 TAATACAGTTTTATTGTGTTA 1081

Qy 1069 CCC--  
 AAGGTTCTAAAGATTTTCATACAAACGGAACAACCTTTTACATTAAGATCCGGCCGG 1126  
 || |||| | || | | | || |||| || | |  
 Db 1082 CCATTTGTGTTCCATTTGCTTCTTTGTATTG-----  
 TTGCATTTAGTACAATC--- 1129

Qy 1127 GAGAGTTTGAACAATTTGAAAGCACCATTGGGTTTAAGCTGCC-----  
 AAACCATC----- 1177  
 || |||| || | || | |||| || | |||| |  
 Db 1130 -AGTGTTTAACTTACTGTAT-----  
 ATTTATGCTTTCTGTATTTACCAGCTATT 1178

Qy 1178 -----  
 GAGCTGCCAAGCGTTTATGGAAAGTATGTGTTGAGCATCATACTTTTTCAGAC 1231  
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 Db 1179 TTAAATGAGCTG--TAACTTTCTAGTAAAGAAT-  
 TGAAAAGCAAATCTCACTAATGATAC 1235

Qy 1232 TACTGTTACCAGAAGCA-----CCTCCCAAGAAATTCCTAACCTTGGGTTC---  
 CAAG 1281  
 || | || |||| | | | |||| | || | | ||  
 Db 1236 -  
 ACAGATAGATAAAGCAAGTCTATCAACATTAATACTAAAAATAAAGACACACACA 1294

Qy 1282 TTTCGTTATAGTGGCAGGACACAA-----GCGCAAACGAGAAGAG----  
 CCAGTG--C 1328  
 | || |||| || || | || | |||| ||||  
 |  
 Db 1295 GAGCATTTTGTGACA-  
 TCCACTACTTATTGCCGCTATGAGTTAGAGTCTATCAGTGTTT 1353

Qy 1329 GTTGATAGATCGCCC-----AGCACCT-----  
 TACTTTGAAC 1360  
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 ||  
 Db 1354 -  
 TTGTTATAACCCCTATTTTCAGGGGGTTAAAAATCAGCTTTAAAAAATACATAAAAA 1412

Qy 1361 GCTCATC---



CAGCAAACGTTATACCATGTCTCGCAGCTTGGATGGAGCATCAGTGAATG 1417  
 ||||| ||| || || | | | | | | | | | |  
 |  
 Db 1413 TTTCATCTTAAAGC--ACTTT---CATTTTATACCAACGTGAAAAGTGC--  
 CATTTTTAG 1465  
  
 Qy 1418 AAAACCATGAAATATACATGAAGGATTCTATGTCTGCTGCAGAGGTTG-  
 GTACTGGCCAG 1476  
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 Db 1466 AATAACTTTAAAGCTTAA--CAGGTTTCCTTTTAATATCCTTTTTTTGTGTGCT---  
 CTT 1520  
  
 Qy 1477 TAC-GCCACAACAAAAGGCATCTCTCAGACCAACTTGATCA-CCACTGTGACTCC---  
 GG 1531  
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 |  
 Db 1521 TACTTACAC----AATGGCTTTGTTTTG-----CTTTTTCAGCCAC----  
 ACCCCTTATG 1567  
  
 Qy 1532 AGAAGAAG-GCTGAGGAGGAGCGGGACGAGGAA--  
 GAGGACAAACGGAGGAAGGGGGAAG 1588  
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 ||  
 Db 1568 TGAAGTAGTGCCTTTGGGTATC---  
 ACGTAAAATTTTTCCAAAGGGTTACTTTAAAAAT 1624  
  
 Qy 1589 AAGTCACGCCCATCTCGGCCATCCAGCACGAGGGAAAGACTGACAGTGAGC--  
 GCACGGA 1646  
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 |  
 Db 1625 CTGTTAC-  
 CACAATTATGAGATGATTTTTTAAGTGATAAATTAACTTCTTCTTGATATAA 1683  
  
 Qy 1647 CACCGCAGCCGACGGGGAGACCACTGCCACTGAGGAGCT---  
 AGAAAAAAGTCAAGATGA 1703  
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 Db 1684 TTCTGC--CC-----AGATCTCT-CCAC--  
 AAGAGCTGAGGGTTTCATAACTTTATGG 1731  
  
 Qy 1704 CCTGATGAAACATCAAACCAACATTAGCGAGCTGA-  
 AAAGAACCTTCTTAGAAACCTCAA 1762  
 | | || || | || || | || ||| ||| || | | |  
 |  
 Db 1732 CTTAAT-AAATGTATGAC--  
 ACTGAAAAGATTTGAGTGTGAATCTACTGAAATCACTATA 1788  
  
 Qy 1763 CAG-  
 ACACTGCCGTAACGAATGAATGGGAGAAGAGGCTTTCCACCTCCCCCGTGCGACTG 1821  
 | ||| || | | || | || ||| || | || | | |  
 Db 1789  
 ATGCACATTGAAGCTATGATGGTATTTGAGTAGTGAGGTTACTTTTGATCGGAGCAAC-- 1846  
  
 Qy 1822  
 GCCGCCAGGCAGGAGGATGCCCCCATGATCGAACCACCTTGTCCTGAAGAGAAA----- 1875  
 | |||| | || ||| ||| | |||||  
 Db 1847 -----ATAATGCTC-----ATAGAA--  
 TCTTCTAGAAGAAGAGAAACAAAGG 1886  
  
 Qy 1876 -ATGGAAACCAAGACGGAGTCCAGTGGATAGAGACGGAACCCACCGTGCA-

CCACCTGCC 1933  
|  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1887 GATTGATAAAATGCTGAGAACTAGTGATTATATATTTTTTC-----  
TGTATTTACCTGAC 1940

Qy 1934  
GCTTAGCACTGAGAAGGTGGTGCAGGAGACCGTGTTGGTGGAGGAGCGGCGTGTGGTGCA 1993  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1941 ATTTA----TTTTAATGTTCAAAAAGTAAACACTTT-----  
AAGTTTGATGTGTTTTACT 1991

Qy 1994 CGC-----GAGTGGGGATGCTTCTTACTCGGCGGGAGACAGCGGGGATGCTGCAGC--  
AC 2046  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1992 CTCTCATTGTTTTAAGTAATTGCCAACT---CAGAATACATC-----  
ATTCTTAGGCTGAA 2044

Qy 2047 AGCCCGCATTACAGGCATTAAAGGGAAAGAGGGCT--CT-----GCTT--  
GACGG 2093  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2045 ATTTGTCTTTC-  
CATTTTTTAAGGTGAAATAGTACTACCTTACGTGATAGCATACAAAGA 2103

Qy 2094 AGGGGGCTAAAGAGGAAGGAGGGGAGGAGGTCGCT-----  
AAAGCTGTCCTGGAACAG 2146  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2104  
AGAAAGCTCTAGAAAGAGAAATTATGGAGAATGATTATTTAAATTACAATTAAGGAAATG 2163

Qy 2147 GAAGAGACAGCCGCTGCTTCC-CGTGAGCGACAAG--AGGAGCAGAG----  
TGCAGCC-- 2197  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2164 AGAATATGATCCCCT-  
CTTCCGAGTTGCCCACAACTTGCTTCTTTGCTTTTGCTCCCTG 2222

Qy 2198 -----ATCCACATTTTCAGAACTTT-----  
GGAACAAAACCTCATTTTGAGT 2240  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2223  
TAATAGAACTACTTTTCAACAAATCTAATTTTGACGGCACC GTTAACCATATTTT---- 2278

Qy 2241 CCTCAACGGTGAAGACGGAAACCATCAGT----TTTGGCAGTGTT-----  
TCACC 2286  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 2279 -CACTACAGCAAACCTTAG-  
TGCTATGGGTTTTCTTTTCTTTGTTTTTTTCTTGATCACT 2336

Qy 2287 GGGAGGAGTAAAGCTAGAAATTTCCA-CAAGAAGTGCCAGTA-  
GTTTACACCGAAACCAA 2344  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 2337 TGTATAGGAAAC---AACATTTTCCAGTGTTATTTGCATATATATTTTGTCC--  
TTCAA 2391

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Qy          2345 AAC--CATCACATATGAATCATCACAGGTCGATCCAGG---
CACAGATCTGGAGCC--- 2395
|          ||| ||| ||||| ||| ||| ||| ||| ||| ||| ||| |||
Db          2392 TATATGCATTACAGATGAA-AATTAAATGTTATACCTGAATTCTTGGGT-
TGGGGCCAAA 2449

Qy          2396 -----AGGC-----GTGCTGATGAG----TG-----CACAG-----
ACGATC 2423
|          | ||          ||||| || |          ||          || ||          | ||
|
Db          2450
ATATTAAGCTGAAAAATAATGCTGGTGTGGATTTGTTTTAAAAACAAAGCTTTATTATGAAC 2509

Qy          2424 A--
CATCTGAAACCACCAGTACCACCACCACTACCCACATCACCAAAACTGTGAAAGGGG 2481
|          | ||| ||||| |          || || |          |          |          ||||| |||
|
Db          2510 ATGCATGTGAATCTG--
GATATTGCCTCTTATTTTTAAGAAAATGGTTCTGTGAAAAGTG 2567

Qy          2482 -----GCATTT---CAGAGAC--AAGAATTGAGAAGCGAATAGT--CAT----
CAC- 2521
|          | |||| || | |          |          || || |          ||| ||| |
|
Db          2568
AATGATATGTATTTTTTCCAAATGCTTCATGGTTAGGAGTCTTCAAGTTCCATGTTCCCCA 2627

Qy          2522 -----GGGGGATGC-AGACATTGACCATGACCAGGCGCT-----GGCTCA-----
GG 2562
|          | | || | | | || | | || |||          ||| ||
|
Db          2628
GATTTGAGATATACTAAAGAAAGAAATTCAAAAGTAGCTATTTGGGGCCCACAAAAATAA 2687

Qy          2563 CAATTAAAGAGGCCAAAGAGCAGCACCC---
TGACATGTCAGTGACCAAAGTAGTGGTCC 2619
|          ||||| ||| ||||| || | |          |||| || ||          | | |
|
Db          2688 CTATTATTTTAGCCTTAGAGCCTTACACTTGTTTCATG-
AAGAGAAAAGGACTTGCATAAC 2746

Qy          2620 ATAAAGAGACAGAGATCACACC-----
AGAAGATGGAGAGGATTGACCAGAGGAATAAC 2673
|          ||| | ||| || || |          | || ||| | ||| || ||| | ||
|
Db          2747 CAAAATAAACAAAG--
CAAGACAAATTAAAAATATGTGGGGGAGAGATCAGTGAAAAG-- 2802

Qy          2674 TTAGCTTGACATGAATGCAGTCATGC---
AAACCGTTAGGAAAACCAGAGCCTATATGG 2730
|          | | || |          | ||||| || |||          || ||          ||| | ||
||
|
Db          2803 -TGGTTTTTC---TTAATGCAGCCCTGCTGGTCCCCATT-----ACAATTGC-----
TTGA 2849

Qy          2731 AGTTCCTC--TTCTAACCCAACTGTACTTGT----ATCT--
GTCCGTGGAAAATTTCAG 2782
|          | ||| |          | ||| || | || ||||          |||| || | || |||
||
|
Db          2850 AATTCACATGGATGTAA---
AATTATAATTGTCAGGATCTTATTCAGATGATCTTTTAAG 2906

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Qy          2783 --TCCAGAAGAATTGACCTTG-----ACCATTAATAAAGACACTGGCA-----
GAGAGAT 2830
|
|
Db          2907
GTTTAACTGGTTTTGCTTTTGTTTATCTATATGTCAAAATACTTGTAAAATTGGGAACAAA 2966

Qy          2831 CTTCCCATAATAAAGCAATCTGA-----TTCAGCAT-----CACT---
AAACCGATAA 2875
|
|
Db          2967 CTTCTC-----
TCAGCTTCTTGAAGTTGTTCAACTATCCTTGCCACTGGAAGACCAAACA 3021

Qy          2876 TGCATGAAGCAAC-GATAAAATTACAAAA-----GAGCAGCATTTTTTAA-----
TTTTC 2923
|
|
Db          3022
AGGTTTTCTACTGCTTTTTCTTTTACATAATATGCTGAGAATTATTTCTTATGCTTTTTTAC 3081

Qy          2924 -----ACAAAATGTCTCA----GTTTTTCAG-----CTATACCTG-----
CTCGT 2958
|
|
Db          3082
TACAAACAAAATTACTCACCTGGATTAAAGATTAAGGCCTTAATCTGTTTAGATTATCTT 3141

Qy          2959 TCATAACCAACA-----ATATAAACCGTG-----GTCTCA--TGTAACACA-
TAAAC 3002
|
|
Db          3142
TAATCTCCATGAAATCGTGAAATAAGACAAGAATAGTGTTTCAGCTGTAGGCCATTTTAC 3201

Qy          3003 AATTCA-TGCCTTTCA----TAG--TTTATTATTATTAAAGTCTAAACAAAATTGC--
AA 3053
|
|
Db          3202
AGCTAATTGCCCATAAATTGTAGCATTTATTGACCTGAAGTACTAAGCTAATTGTCTTGA 3261

Qy          3054 TTTCTTAGGTAACC-----TTATATTTACAATAAATGAAGATTA-
CCCTCAAATG 3102
|
|
Db          3262
CTACTCAAAGCCCCGTAATTGTTGTCAACTTTCCCCCTTTGTGTTGTGTAGCCCTAACGT- 3320

Qy          3103 CTAGAAGC-----TGTCTAGGTCCGTCCGGTGTGTCAGATTTCTC-----
AGATTAGA- 3151
|
|
Db          3321 CATTTAGCTTGTTGTCT-GATGCCTCCAGTAGGACA-----
CCTCCGATGGAGCTTTGAT 3374

Qy          3152 ---TGTGC--CAATAACCAAGTTTATTC--
AGTAAACAACTTGTTACTTGTTTCATCTGGT 3204
|
|

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Db 3375 TTCTGAGCAGCGAAAGC----  
TCCCTTCCTAAGATGCATCTCGCATAGGCTGCCTATGAT 3430

Qy 3205 TTATTAC-----TCT-CACCCATAAACAGTAATGACTCTCTGA----  
CCCTCTGGAAAT 3253

| | | | | | | | | | | | | | | | | | | | | |

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Db 3431  
GAAGGACCGTGCACCTCCACTCCAACAGAGTGCTGAGTTTAAAAGTTGACCTGTG----T 3486

Qy 3254 ATGTAAT---  
GCTTCCAATCTTGCTTTTGTGTATCTCATTTAATTTGTTCCGGTTAAGGA 3309

| | | | | | | | | | | | | | | | | | | | | |

|

Db 3487 TTGTAATTTCACTTTTC-  
ATCTTGCTTAATAAATATCTGCTGGATTCTTTCAAAAAAAAA 3544

#### RESULT 4

US-10-478-914-21/c  
; Sequence 21, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 21  
; LENGTH: 3589  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-21

Query Match 34.7%; Score 6758.5; DB 1; Length 3589;  
Best Local Similarity 45.0%; Pred. No. 0;  
Matches 1745; Conservative 0; Mismatches 1272; Indels 861;  
Gaps 237;

Qy 2 CGGCGCGCCCGAGC-  
CTAGTCCCCACGCCGCGCGCGCC----- 39

| | | | | | | | | | | | | | | | | | | | | |

Db 3589 CTGC-AGCTCGAGCACATGT-----  
GGCCTTTTTTTTTTTTTTTTTTTTTTTT 3546

Qy 40 -----  
CGGGCTCCCTGCTGATCCCAGAACAATCAACCATGACGACCGAATCTGG 88

| | | | | | | | | | | | | | | | | | | | | |

| |

Db 3545 TTTTTTTTTTTGAAAGAATCCAGCAGAT-----ATTTATTAAGCAAGATGAAAG----  
TGA 3495

Qy 89 A---  
TCAGACTCGGAATCCAAGCCGGACCAGGAGGCCGAGCCCCAGGAGGCGGCGGGGGC 145  
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||  
Db 3494 AATTACAAACACAG-----GTC-  
AACTTTTAAACTCAGCACTCTGTTGGAGTGGAGGT 3443

Qy 146 GCAGGGGCGGCGGGGGCCGT--GCCGGAGCCGCCCAAG-GAGGAGCAGC--  
AGCAGGCCC 200  
| | | | | | | | | | | | | | | | | | | | | |  
Db 3442 GCA----CGGT-----  
CCTTCATCATAGGCAGCCTATGCGAGATGCATCTTAGGAAG--- 3395

Qy 201 TGGAGCAGTTCGCCGCCGCTGCAGCGCACAGCACCC-CGGTGCGAG-----  
GGAGGTC 252  
| | | | | | | | | | | | | | | | | | | | | |  
Db 3394 -GGAGCT-TTCGCTGCT-CAGAAAT-CAAAGCTCCATCGGAG-  
GTGTCCTACTGGAGGCA 3340

Qy 253 ACTGACAAGGAACAGGAGTTTGTGTCAGGGCTGCAAAACAGCTCGAA-----  
TAT 303  
| | | | | | | | | | | | | | | | | | | | | |  
Db 3339 TCAGACAACAAGCTAAA---TGACGTTAGGGCTAC---  
ACAACACAAAGGGGAAAGTTGA 3286

Qy 304 CAGCAATTAGAAGACGATAAACTTTCTCAGAAATCATCTAGCAGTAACTCTC---  
TCGG 360  
| | | | | | | | | | | | | | | | | | | | | |  
Db 3285 CAACAATTCAGGGGCTTTGAGTAGTC---AAGACAATTAGCTTAGTACT-  
TCAGGTCAA 3231

Qy 361 T-----CTCCATTAAAGATTGTCAAAAAGCC-TAAAA--GCATGCAG-  
TGCAAAGTGATA 411  
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Db 3230 TAAATGCTACAATTT--  
ATGGGCAATTAGCTGTAAAATGGCCTACAGCTGAAACACTATT 3173

Qy 412  
CTTCTCGATGGATCAGAATATACCTGTGATGTAGAGAAACGCTCCAGAGGACAAG----T 467  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 3172 CTTGTC-TTATTTACGATTTTCATGGAGAT-  
TAAAGATAATCTAAACAGATTAAGGCCTT 3115

Qy 468 GCTGTTTGATAAAGTGTGTGAACACTTG-----  
AACTTGCTAGAGAAAGACTACTTT 519  
| | | | | | | | | | | | | | | | | | | | | |  
Db 3114 AATCTTTAATCCAG-  
GTGAGTAATTTGTTTGTAGTAAAAAGCATAAGAAATAATTCTCA 3056

Qy 520 G-GGCTTACGTATC--GAGATGC--TGAAAACCAGAAGAATTGGTTGGAC--CCT---  
GC 569  
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Db 3055 GCATATTATGTAAAAGAAAAAGCAGTGAAAACC-----  
TTGTTTGGTCTTCCAGTGGC 3003

Qy 570 TAAGGAAATAAAAAAAC----AGGTTCGAAGTGGTGCTTGG---  
CACTTTTCATTTAATG 622

|  
 Db 3002  
 AAGGATAGTTGAACAACCTTCAAGAAGCTGAGAGAAGTTTGTTCCTCAATTTACAAGTATTT 2943  
  
 Qy 623 TGAAATTTT-ATCCACCAGACCCTGCCCAACTAT--  
 CTGAAGATATCACCAGGTACTACC 679  
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 Db 2942 TGACATATAGATAAAACAAAAGCAAACACAGTTAAACCTTAAAGATCATCT-  
 GAATAAGA 2884  
  
 Qy 680  
 TCTGCTTGCAGTTGCGAGATGACATCGTGTCCGGAAGGCTGCCCTGCTCCTTTGTTACCC 739  
 || || || || | || || ||| | | | | |||||  
 Db 2883 TC--CTGACAATTATAATTTTACA-----TCCATGTGAATTTCAAG--  
 CAATTGTTAATG 2833  
  
 Qy 740 TGGCCTTGCTGGGCTCC--  
 TACACTGTCCAGTCAGAGCTCGGAGACTATGACCCAGATGA 797  
 || | || |||| | || ||| | | || | || | |||||  
 Db 2832 GGGACCAGCAGGGCTGCATTAAGAAAACCA--CTTTTCACTGA-  
 TCTCTCCCCACATAT 2776  
  
 Qy 798  
 ATGTGGGAGCGATTACATTAGTGAGTTCCGCTTTGCACCAAACCACACTAAAGAACTGGA 857  
 | | || || || | || || | || || || || || || ||  
 |  
 Db 2775 TTTTAATTTGTCTTGCTTTGTTTATTTTGGTTATGCA--AGTCCTTTCT-----  
 CTTCA 2724  
  
 Qy 858 AGACA-AAGTGATCGAGCTGCACAAGAGCCACAG----AGGAAT-----  
 GACGCCAGC 905  
 || | |||| | || | || | || | || || | || || ||  
 Db 2723 TGAAACAAGTGTAAG----  
 GCTCTAAGGCTAAAATAATAGTTATTTTGTGGGCCCA-- 2670  
  
 Qy 906 AGAAGC-AGAGATGCATTTCTTGAAAATGCCAAAAAATTATC-  
 AATGTATGGGGTAGAT 963  
 | ||| | || ||||| | | |||| | | ||||| |  
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 Db 2669 AATAGCTACTTTTGAATTTCTT-----  
 TCTTTAGTATATCTCAAATCTGGGGAACAT 2618  
  
 Qy 964 -TTACATCATG-CTAAGGACTCAGAAGGGGTAGAAATTATGTTAGGAGTT---  
 TGTGCAA 1018  
 || | | | || || |||| | | || || || || || ||  
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 Db 2617  
 GGAACCTGAAGACTCCTAACCATGAAGCATTGGAATAACATATCATTCACTTTTCAC 2558  
  
 Qy 1019  
 GTGGTCTGTTGATATATCGCGACCGGCTGCGAATAAACAGATTTGCCTGGCCCAAGGTTT 1078  
 | || | | || || |||| ||||| || || ||  
 ||||  
 Db 2557 AGAACCATTTTCTTAAAAATAAGAGGC----AATATCCAGATTCACATG---CAT-  
 GTTC 2506  
  
 Qy 1079 ----TAAAGATTT-  
 CATACAAACGGAACAACCTTTTACATTAAGATCCGGCCGGGAGAGTT 1133  
 ||||| ||| | |||| | || || |||| | || ||

Db 2505 ATAATAAAGCTTTGTTTTAAACAAATCCACACCAGCATTAT-  
TTTCAGC----- 2457

Qy 1134 TGAACAATTTGAAAGCACCATTGGGTTTAAG--CTGCCA---  
AACCATCGAGCTGCCAAG 1188

| | | | | | | | | | | | | | | | | | | | | |

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Db 2456 TTAATATTTTGGCCCCAACCCAAGAATTCAGGTATAACATTTAATTTTC-  
ATCTGTAATG 2398

Qy 1189 CGTTTATGGAAAG-----TATGTGTTGAGCATCATACATT-----  
TTTC--A 1228

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Db 2397 CATATATTGGAAGGACAAAATATATAT---  
GCAATAACACTGGAAAATGTTGTTTCCTA 2341

Qy 1229  
GACTACTGTTACCAGAAGCACCTCCCAAGAAATTCCTAACCTTGGGTTCCAAGTTTCGTT 1288

| | | | | | | | | | | | | | | | | | | | | |

|

Db 2340 TACAAGTGAT-CAAGAA--AAAAACAAAGAAAAAGAAAACCCATAGCACTAAGTTT-  
GCT 2285

Qy 1289 ATAGTGGCA----GGACACAAGCGCAAACGAGAAGAGCCAG-TGCGTTGA----  
TAGATC 1339

| | | | | | | | | | | | | | | | | | | | | |

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Db 2284 GTAGTGAAAATATGGTTAACGGTGC---  
CGTGCAAAATTAGATTTGTTGAAAAGTAGTTC 2228

Qy 1340 -----GCCCAGCACCTTACTTTGAACGCTCATC-----  
CAGCAAACGT 1377

| | | | | | | | | | | | | | | | | | | | | |

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Db 2227 TATTACAGGGAGCAAAAGCAAAGAAGC-  
AAGTTTGTGGGCAACTCGGAAGAGGGGATCAT 2169

Qy 1378  
TATACCATGTCTCGCAGCTTGGATGGAGCATCAGTGAATGAAAACCATGAAATATACATG 1437

| | | | | | | | | | | | | | | | | | | | | |

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Db 2168 ATTCTCATTTTC-----  
CTTAATTGTAATTTAAATAATCATTCTCCATAATTTCTCTTTC 2115

Qy 1438 AAGG-----ATTCTATGTCTGCT---  
GCAGAGGTTGGTACTGGCCAGTACGCCACAACAA 1489

| | | | | | | | | | | | | | | | | | | | | |

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Db 2114 TAGAGCTTTCTTCTTTGTATGCTATCACGTAAGGTAGTACT----  
ATTTACCTTAAAAA 2059

Qy 1490  
AAGGCATCTCTCAGACCAACTTGATCACCCTGTGACTCCGGAGAAGAAGGCTGAGGAGG 1549

| | | | | | | | | | | | | | | | | | | | | |

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Db 2058 ATGGAA-----AGACAAATT---TCAGC-CTAAGAAT-----  
GATGTATTCTGAGTTGG 2014

Qy 1550 AGC-----



GGGACGAGGAAGAGGACAAACGGAGGAAGGGGGAAGAAGTCACGCCCATCT 1603  
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 |  
 Db 2013 CAATTACTTAAACAATGAGAGAGTAAACACATCAAACCTAAAGTGTTTA----  
 CTTTT 1958

Qy 1604 CGGCCATCCAGCACG-----AGGGAAAGACTGACA-----  
 GTGAGCGCACGGACACCGC- 1652  
 | || | || | || | || | || | || | || | || | || |  
 ||  
 Db 1957  
 TGAACATTAAATAAATGTCAGGTAAATACAGAAAAATATATAATCACTAGTTCTCAGCA 1898

Qy 1653 ----AGCCGACGGGGAGACCACTGCCACTGAGGAGCTAGAAAAAACTC-----  
 AAGA 1700  
 | | | | || | || | || | || | || | || | || | || |  
 |  
 Db 1897 TTTTATCAATC-----  
 CCTTTGTTTCTCTTCTTCTAGAAATTCTATGAGCATTATGT 1845

Qy 1701 TGACCTGAT-----GAAACATC-----AAACCAACATTAGC-----  
 GAGCTGAAA 1740  
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 Db 1844 TGCTCCGATCAAAGTAACCTCACTACTCAAATACCATCA-  
 TAGCTTCAATGTGCATTAT 1786

Qy 1741 AGAACCTTCT-TAGAAAC-CTCAACAGACACTGCCGTAACG---  
 AATGAATGGGAGAAGA 1795  
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 |  
 Db 1785  
 AGTGATTTTCAGTAGATTCACACTCAAATCTTTTCAGTGTGCATACATTTATTAAGCCATAA 1726

Qy 1796 GGCTTT-----CCACCTCCCCCGT---GCGA-CT-GGCCGCC---  
 AGGCAGGAGGATGCC 1842  
 | | | || | || | || | || | || | || | || | || | || | || |  
 Db 1725  
 AGTTATGAAACCCTCAGCTCTTGTGGAGAGATCTGGGCAGAATTTATACAAGAAGAAGTT 1666

Qy 1843 CCCATGATCG--AACCACCTGTCCCTGAAGAGAAAATGGAAACCAA-----  
 GACGGAGTC 1895  
 | || | | || | || | || | || | || | || | || | || | || |  
 |  
 Db 1665 TAATTTATCACTTAAAAATCATCTCATAATTG----  
 TGGTAACAGATTTTTAAAGTAACC 1610

Qy 1896 CAGTGGATAGAG----AC--GGAACCCACCGTGAC-----  
 CACCTGCCGCTTAGCACTG 1944  
 | || | || | || | || | || | || | || | || | || | || |  
 |||  
 Db 1609 CTTTGGAAAAATTTTACGTGATACCCAAAG-  
 GCACTAGTTCACATAAGGGGTGTGGCTG 1551

Qy 1945 AGAAGGTGGTGCAGGAGACC---  
 GTGTTGGTGGAGGAGC----- 1980  
 | || | || | || | || | || | || | || | || | || | || |  
 Db 1550 AAAAAGCAAAACA--AAGCCATTGTGTAAGT-  
 AAAGAGCACACAAAAAAGGATATTAAA 1494

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Qy          1981 -GG--CGTGTGGTGCACGCGAG-----TGGGGAT-
GCTTCTTACTCGGCGGGAGACAG 2029
      ||      | |||      ||      ||      |      || ||      || | ||      || | |
|
Db          1493
AGGAAACCTGTTAAGCTTTAAAGTTATTCTAAAAATGGCACTTTTCACGTTGGTATAAAA 1434

Qy          2030 CGGGGATGCT----GCAGCA-----CAGCCCGCATT-----
CACAG 2061
      |      ||||      | | |      |      | | | ||      | |

|
Db          1433
TGAAAGTGCTTTAAGATGAAATTTTTATGTATTTTTTTAAAGCTGATTTTTTAACCCCTG 1374

Qy          2062 GCATTAAAGGG----AAAGAGGGCTCTGCTTGACGGAGGGGGCTAA-----AGAGG-
AAG 2111
      | || |||      || || | ||| | |||      ||||      || ||

||
Db          1373 AAAATAGGGGGTTATAACAAGAACACTGATAGAC-----
TCTAACTCATAGCGGCAAT 1321

Qy          2112 GAGGGGAGGAGGTCGCTAAA--GC-----TGTCTT-----
GGAACAGGAA--G 2150
      || | ||| ||| |||| || ||      |||| |      | |      ||

Db          1320
AAGTAGTGGATGTCACATAAAATGCTCTGTGTGTGTCTTTATTTTTTTAGTATTTTTTAATGT 1261

Qy          2151 AGACAGCCGCTGCTTCCCGTGAGCGACAAGAGGAGCA-
GAGTGCAGCCATCCACATTTCA 2209
      || || | ||||      | | | | | ||| || || || |

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Db          1260 TGATAGAC-TTGCTTT-----ATCTATCTGTGTATCATTAGTG-AG--
ATTTGCTTTTCA 1210

Qy          2210 GAAACTTT----GGAACAAAAACCTCATTTTGAGTC-
CTCAACGGTGAAGACGGAAACCA 2264
      | ||||      | || | | |||| || | | || || || || || ||

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Db          1209 -ATTCTTTACTAGAAAGTTACAGCTCATTTAAATAGCT----
GGTAAATACAGAAAGCA 1155

Qy          2265 TCAGTTTTGGCAGT--GTTT---CACCGGGAGGAGTAAA-GC-----
TAGAAATTTCCAC 2313
      | | | | |||| |||| ||| | | | |||| ||      || |||

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Db          1154 TAAATAT--
ACAGTAAGTTTAAACACTGATTGTACTAAATGCAACAATACAAAGAAGCAA 1097

Qy          2314 AAGAAGTGCCAGTAGT-TCACACCGAAAC--CAAAAC-----CATCACATAT---
GAA 2360
      | | | | | | || |||| |||| | ||      | ||| ||||

|
Db          1096
ATGGAACACAAATGGTAACACAATAAAACTGTATTACATTTGTGCTTCAAATATTACAAT 1037

Qy          2361 TCAT-----CACAGGTCGATCCAGGCACAGATCTGGAGCCAGGCGT-
GCTGATGAGTGC 2413
      |||      || ||| | | | | |||| |||| | | | |

Db          1036 ACATTATATACAATAGTC---
CAAAATAAACATCTCATGCCAAGTGACACAAAAACGAAT 980

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Qy 2414 A-CAGACGATCACATCTGAAACCACCAGTACCACCAC----  
 CACTACCCACATCACCA-- 2466  
 | | | | | | | | | | | | | | | | | | | | | |

Db 979 AGCAAGCAAAAAAATC--CAGCCATATGTA-  
 CATTACTTTTTTCTTTAATAATAAACATT 923

Qy 2467 AAACGTGAAAGGGGGC-  
 ATTTTCAGAGACAAGAATTGAGAAGCGAATAGTCATCACGGGG 2525  
 | | | | | | | | | | | | | | | | | | | | | |

Db 922 CAACTCTGAACTGGGGCAATTTC----ACTA-CATACAGATGC----AGTC--  
 CGCCTTT 874

Qy 2526 GATGCAGACAT-TGACCATGACCAGGCG--CTGGCTC-  
 AGGCAATTAAAGAGGCCAAAGA 2581  
 | | | | | | | | | | | | | | | | | | | | | |

Db 873 TATTC---CATATAACCAT--  
 CCTGCCTTCCTATATCTACGCTATTTCAGTAGG----- 826

Qy 2582 GCAGCACCTGACATGTCTAGTGACCAAAGTA---GTGGT-  
 CCATAAAGAGAC----- 2629  
 | | | | | | | | | | | | | | | | | | | | | |

Db 825 -----TTCCTG---TGTCAT-  
 TCTTATGTACATGTGGAGCAAAAAAGATAAAAGAATGT 775

Qy 2630 AGAGATC-----ACACCAGAAGATGGAGAGGATTGACCAGAG-----  
 GAATAACTTAGCT 2679  
 | | | | | | | | | | | | | | | | | | | | | |

Db 774  
 AGTGCTCTGTATTCTTAATGGGGTGATGTTGATAGATCAGCGAACCTGGGGTGCATAACC 715

Qy 2680 TGC--ACATGAATGCAGTCATGCAAACCGTTAGGAAAA---CCAG--  
 AGCCTATATGGA 2731  
 | | | | | | | | | | | | | | | | | | | | | |

Db 714  
 TTCTTTTCATTAAACCTTCCTCGTAGTCCGTCTGGCAAAGGATCATGTTATTCTTTAGGAA 655

Qy 2732 -----  
 GTTCCCTCTTCTAACCCAACCTGTACTTGTATCTGTCCGTGGAAAATTTTCAGTCC 2785  
 | | | | | | | | | | | | | | | | | | | | | |

Db 654 AAATTTGTCTCCAACACAAAATC-TCTGATTACAAAGCTG-ACATGCAAAG---  
 CAGTCC 600

Qy 2786 AG-----AAGAATTGACCTTGAC---CATTAATAAAGACACTGGCAGAGA-  
 GATCTTCCC 2836  
 | | | | | | | | | | | | | | | | | | | | | |

Db 599 AGGTGGTAAACATTGTCCTTGGCACGCATCACCATC-  
 TCAAAGGCAGGGATGAGCTTACT 541

Qy 2837 ATAATAAAGCAATCTGATT-CAGCATCACTAAA-----  
 CCGATAATGCATGAAGCAAC- 2888  
 | | | | | | | | | | | | | | | | | | | | | |

Db 540 ACAG-GCAGCG--  
 CAGTTTCCCCTTACACCAAAGAGCCTCAGATAGTCTCTGCGACAAAG 484

Qy 2889 GATAAAATTA-CAAAGAG--CAGCAT---TTTAAATTTTCACAA---

AATGTCTCAGTT 2939  
 |||| | | | | | | | | | | | | | | | |  
 Db 483  
 GATAAGATTAGCTTTAGTGTACAGGGTGGAGCCACCTCCCCAAGCGACAGTCACAGCA 424

Qy 2940 TTCAGCTATACCTGC--  
 TCGTTTCATAACCAACAATATAAACCGTGGTCTCATGTAACACA 2997  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 423 GGCA-CACTTCAGGCAGTC-TTCAT-GCCAG-TATTTGTCCAGTG----  
 CCTTTAGAAGA 372

Qy 2998 TAAACAATTCATGC-  
 CTTTCATAGTTTATTATTATTAAAGTCTAAACAAAATTGCAATT- 3055  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 371 T-ACCGGTCCTTGATCTTTTCG-----  
 GTTGCAGCCAGCACAACTTTTCGGCTT 325

Qy 3056 ----TCT---TAG---  
 GTAACCTTATATTTACAATAAATGAAGATTACCCTCAAATGCTA 3105  
 | | | | | | | | | | | | | | | | | |  
 Db 324 GGTGTCTGGCTGGACTGAGAGCATTTGTATACCAAACT---  
 TTTCTCCTTTTTCTGCAT 268

Qy 3106 GAAGCTGTCTAGGTCCGTCCGGTGTGTGTCAGA-TTTCCTCAGATTAG--ATGTGC-  
 CAATA 3161  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 267 G-AGTTGACTTAGGC-----  
 GTGTCTGAGTTGCAGCAGCTTCGCATTGAGCACCAAA 217

Qy 3162 ACCAAGTTTATTTCAGTAAA-----CAACTTGTACTTGTTC-----  
 ATCTGGTTTA 3207  
 | | | | | | | | | | | | | | | | | |  
 Db 216 CCCAAAGGTA-  
 GAAGTAGAAGGGGGTCTCCTTGATTTTCGCTTAAGTGTGGACCTGGTGCG 158

Qy 3208 TTA CTCTCTCAC-----CCATAAACAGTAATGACTCTCT-----  
 GAC-----C 3243  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 157  
 CAGCCTACACCGCCGAGGACCGACTATTGTGAAGCCACTTTGGGAGCGGGTCGGAGTGGC 98

Qy 3244 CTCTGGAAAT-----ATGTAATG-----CTTCCAATCTTG-----  
 CTTTGTGTA 3282  
 | | | | | | | | | | | | | | | | | |  
 Db 97  
 GGCAGGGGGTGGGGGAAGGGATGAGGACGGCCAGACAAGACAGGGCGCACACACGGAGCC 38

Qy 3283 TCTC-----ATTTAATTTG-----TTCCGGTTAAGG 3308  
 | | | | | | | | | | | | | | | | | |  
 Db 37 CCTCGCAGTGTGCAAAATGATGGCGAATCCAGT--AGG 2

RESULT 5  
 US-10-478-914-61  
 ; Sequence 61, Application US/10478914  
 ; Patent No. 7335755

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; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 61
; LENGTH: 2437
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-61
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Query Match          30.2%; Score 5876; DB 1; Length 2437;
Best Local Similarity 42.7%; Pred. No. 0;
Matches 1445; Conservative 0; Mismatches 861; Indels 1076;
Gaps 205;
```

```
Qy          1 GCGGCGCGCC-CGAGCCTAGTC--CCCAC-----GCCGCGGCGC---
GCCCGGGCTCC 47
          ||||  || |||||  ||  || ||  || || |  || ||
||||
Db          22
CGCGAATTCCTCGAGCACTGTTGGCCTACTGGGTGTACTGTGGAGACTGTCAAAGTCTCC 81

Qy          48 CTGCTGATCCCAG-AACAATCAACCATGACGACCGAATCTGGATCAGACTCGGAA---
TC 103
          | || ||||  |  | | |||  | |||  | ||  | || |
||
Db          82 ---
CGGAGCCCAATTTCCGGAAGCGGTGAGTTCTGAAAGAAGTTCCTGCACCGTAGTTTC 138

Qy          104 CAAGCCGGACCAGGAGGCCGAGCC--
CCAGGAGGCGGCGGGGGCGCAGGGG-----C 153
          |  | | |  || ||  || ||| || ||| | |||| | |
|
Db          139 C---CAAGTCTGCGAATCC---CCAACCATGA-
GCGCCTCGGGCGTACTGTCCTTTACCC 191

Qy          154 GGCGGGGGC-CGTGCCGAGCCGCCCAAGGAGGAGC-AGCAGCAG--GCCCTGGA-
GCAG 208
          ||  ||  | || || || | |||| | | | | || | | ||||| ||
|
Db          192
AGCAAGGATGGGAGCAGGTGCTGGCCAAAGTGAAACGGGCTGTGGTTTACCTGGACGCCG 251

Qy          209 --TTCGCC----GCC-----GCTGCAG---
CGCACAGCACCCCGGTGCGAGGGAGG 250
          | ||||  |||  |||| |  | | | | || | ||| ||
||
Db          252
CCTGCGCCGAGAGCCTGCACTGGGGCTGCGGATCCACCCGTCTCCTGGAGGCGGTGGGGG 311
```

Qy 251  
 TCACTGACAAGGAACAGGAGTTTGTCTGCCAGGGCTGCAAAACAGCTCGAATATCAGCAAT 310  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | | | |  
 Db 312 GCCCTGAC-----TGTCACCTGCGAGAGTT-CG----AGCCCGA-----  
 CGCAAT 351

Qy 311  
 TAGAAGACGATAAACTTTCTCAGAAATCATCTAGCAGTAAACTCTCTCGGTCTCCATTAA 370  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 352 TGGTGGTGGG-----GCCAAGCAG-----CCCAAGG-  
 CAGTGTGTTG 386

Qy 371  
 AGATTGTCAAAAAGCCTAAAAGCATGCAGTGCAAAGTGATACTTCTCGATGGATCAGAAT 430  
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 | |  
 Db 387 TGCTGAGCTGCCTGCTGAAAGGC---CGGACCGTGGAGATCCTAC-----  
 GGGACATCAT 438

Qy 431  
 ATACCTGTGATGTAGAGAAACGCTCCAGAGGACAAGTGCTGTTTGATAAAGTGTGTGAAC 490  
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 Db 439 CTGCC---GCAGT-----CACT-----TCCAGTATTGTGTG-----  
 GTGGTC 472

Qy 491  
 ACTTGAACCTTGCTAGAGAAAGACTACTTTGGGCTTACGTATCGAGATGCTGAAAACCAGA 550  
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 Db 473 AC---AAC---CGTGAG-----CCAC-----  
 GCTGTCCACCTCA 500

Qy 551 AGAATTGGTTGGACCCTGCTAAGGAAATAAAAAACAG-  
 GTTCGAAGTGGTGCTTGGCAC 609  
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 | | | | |  
 Db 501 CAGCTAATCATGTCCAGCGGCGG-----CAGCGGCCGAGATGGAG--  
 GGGCA- 546

Qy 610 TTTTCATTTAATGTGAAATTTTATCCACCAGACCCT----  
 GCCCAACTATCTGAAGATAT 665  
 | | | | | | | | | | | | | | | | | | | | | |  
 | |  
 Db 547 ---GCAGCCGGTGT-----TCGAGCAG---  
 CTGGAGGAGAAGCTGTGTGAATGGAT 591

Qy 666 ---CACCAGGTACTACCTCTGCTTGCAAGTTGCGAGATGACATCGTGTCCGG--  
 AAGGCTG 720  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | | | |  
 Db 592 GGGCAACATGAACTA-CACGGC-----CGAGGTGT-  
 TCCATGTCCCGTTATTGCT- 639

Qy 721 CCCTGCTCCT-TTGTTACCCTGGCCTTG-  
 CTGGGCTCCTACACTGTCCAGTCAGAGCTCG 778  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 640 ---TGCCCCTGTTGCTCCCC--

ACTTTGCCTTGACTCCAGCTTTTGCATCCCTTTTCCC- 693

Qy 779  
GAGACTATGACCCAGATGAATGTGGGAGCGATTACATTAGTGAGTTCCGCTTTGCACCAA 838  
||| ||| | ||| || | |||  
Db 694 ---ACTGCTACCC--CAGGATGT---GCACCTCCTTAA-----  
TAGCGCCCG 732

Qy 839 ACCACACTAAAG--AACT-GGAAGACAAAGTGAT-CGAGCTGCACAA---  
GAGCCACAGA 891  
||| || | || | || |||| | |||| | || ||| | ||  
||||  
Db 733  
ACCGGACAAGAGGAAGCTGGGAAGCCTGGGTGATGTGGACTCCACTACGCTAACCCCAGA 792

Qy 892 GGAATGACGCCAGCAGAAGCAG---  
AGATGCATTTCTTGGAATGCCAAAAATTATCA 948  
| | || | ||| ||||| || | ||| |  
||  
Db 793 G-----CTGCTGCTGCAGATCAGATGC---CTAGTGTCAGGCCTCAG----  
TTCT 835

Qy 949 ATGTATGGGGTAGATTTACATCATGCTAAGGACT-  
CAGAAGGGGTAGAAATTATGTTAGG 1007  
||| || | ||| | |||| | | ||| || || |||  
Db 836 CTGTGTG-----AACAT--TTAGGAGTACGGGAGGAGT----  
GTTTTGCT--- 874

Qy 1008  
AGTTTGTGCAAGTGGTCTGTTGATATATCGCGACCGGCTGCGAATAAACAGATTTGCCTG 1067  
|| || | ||| | | | ||||| ||  
|||  
Db 875 -GTAGGTTTCCTTAAGTCAGGT-----CATC--GCTGCGGAT-----  
CTG 910

Qy 1068 GCCCAAGGTTCTAAAGATTTTCATACAAACGGAACA--  
ACTTTTACATTAAGATCCGCGCG 1125  
||| | | | || | || | ||| | || | || |||  
|  
Db 911 GCCAATTATGCCCCTG----CAAAGAACAGGAAGAAGACTGCTGCA-----  
GGCAG 957

Qy 1126 GGAGAGTTTGAACAATTTGAAAGCACCATTGGGTTTAAGCTGCCA-  
AACCATCGAGCTGC 1184  
| ||| || | |||| | | || |||| | || ||  
Db 958 G-----GCATCAGT-  
GGTTTTTGTGGACAGAACCCTGGATCTCA 995

Qy 1185  
CAAGCGTTTATGGAAAGTATGTGTTGAGCATCATACATTTTTTCAGACTACTGTTACCAGA 1244  
|| | | ||| ||||| |||| |||  
|||  
Db 996 CAGGAGC-----AGTTGGACATCATG-----  
GAGACAACCTTAGTAGAGA 1034

Qy 1245  
AGCACCTCCCAAGAAATTCCTAACCTTGGGTTCCAAGTTTCGTTATAGTGGCAGGACACA 1304  
|| | | || | ||| || | ||| ||||  
||||  
Db 1035 AGATCATTTTC-AGCACTTCC---CC---AGCTCC-----

CAGGCCACA 1070

Qy 1305  
AGCGCAAACGAGAAGAGCCAGTGC GTTGTATAGATCGCCCAGCACCTTACTTTGAACGCTC 1364  
|||||  
Db 1071 ----CAAATGA-----TG---TGATGGTT-----AACATGAT---  
AGCGCTC 1102

Qy 1365 ATCCAGCAAACGTTTATACCATGTCTCGCAGCTTGGATGGAGCATCA----  
GTGAATGAAA 1420  
| | ||| ||| | | ||| ||| ||| |||  
Db 1103 A--CTGCA-----  
CTCCATACTGAGGAGGAAAATTATAATGTGGTTG--C 1143

Qy 1421 ACCATGAAATATACATGAAGGATTCTATGTCTGCTGCAGAGGTTGGTACTGGCCAGT-  
AC 1479  
|||| | |||| | | ||| ||||  
||  
Db 1144 ACCAGG-----CTGTCT--TTC-----  
ACAATTCAGTGAC 1171

Qy 1480 GCCACAACAAAAGGCATCTCTCAGACCAACTTGA-  
TCACCACTGTGACTCCGGAGAAGAA 1538  
| |||| | |||| | || | |||| | || | ||||  
|  
Db 1172 ACCACAGCCAAAG----CCCTATGGGAAGCTTTACTGAACACTAAG-CAC-----  
AAAGA 1221

Qy 1539  
GGCTGAGGAGGAGCGGGACGAGGAAGAGGACAAACGGAGGAAGGGGGAAGAAGTCACGCC 1598  
||| | | ||| || | |||| | ||||  
Db 1222 GGCAGTGATGGA-----  
AGTTCGGAGACATCTAGTGGAAG----- 1256

Qy 1599  
CATCTCGGCCATCCAGCACGAGGGAAAGACTGACAGTGAGCGCACGGACACCGCAGCCGA 1658  
|||| | | || |||| ||| || | || | |  
|  
Db 1257 -----CGGCAAGC-----AGAGAAAACCTGCCAAT-----CA-  
AGATGAGTA 1292

Qy 1659  
CGGGGAGACCACTGCCACTGAGGAGCTAGAAAAAACTCAAGATGACCTGATGAAACATCA 1718  
|||||| | ||| || | | ||| ||| ||| |  
|||  
Db 1293 TGGGGAGA-----GTCACACCGGGAC-----AGCTC---ATGTCCT-----  
ATATTCA 1332

Qy 1719  
AACCAACATTAGCGAGCTGAAAAGAACCTTCTTAGAAACCTCAACAGACACTGCCGTAAC 1778  
| | ||||| ||||| |||  
|||  
Db 1333 GCTCTTC-----AAGAAC-----AACCTCAA-----  
AGCTCTAAT 1362

Qy 1779  
GAATGAATGGGAGAAGAGGCTTTCCACCTCCCCCGTGC GACTGGCCGCCAGGCAGGAGGA 1838  
|||| | || | || |||| | || ||||| |  
Db 1363 GAATCATTGTGG-----CCTCCTCCAGCTTG-



Qy            2313 CAAGAAGTGCCAGTAGTTACACCGAAACCAAAACCATCACATATGAA-  
TCATCACAGGT 2371  
  
|                 |   ||   |   |   |||||   |   |||||   |   |   ||||   ||   ||

Db 1736 ATTAATCTGAC---ATTTCACA---  
AATCCAAAATTGCCGTGGATGAACTCTTTACT--T 1787

Qy 2372  
CGATCCAGGCACAGATCTGGAGCCAGGCGTGCTGATGAGTGCACAGACGATCACATCTGA 2431  
| | | | | | | | | | | | | | | | | | | | | |

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Db 1788 CACTTCGGG-ATATTGCTGGAGCTCGGAGT-CTCCTGA---AACA---  
GTTTAAGTCTGT 1839

Qy 2432 AAC--  
CACCAGTACCACCACCACTACCCACATCACCAAACTGTGAAAGGGGGCATTTC 2489  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1840 ATATGTTCTGGAATCATACCCACCAGGCATCTTATAAGC-----  
CATTGTT 1887

Qy 2490 GAGACAAGAATTGAGAAGCGAATA-GTCATCACGGGGGATGCAGA---  
CATTGACCATGA 2545  
| | | | | | | | | | | | | | | | | | | | | |

|||  
Db 1888 GAAGCAAG--TTGTGGAGGAAATATTTTCATCCCGAGAGGC-  
CAGATTCCGTTGATATTGA 1944

Qy 2546 CCAGGCGCTGGC-  
TCAGGCAATTAAAGAGGCCAAAGAGCAGCACCCCTGACATGTCAGTGA 2604  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1945 ACA--C-ATGTCTTCAGGC-----CTCACTGA----  
TC----- 1970

Qy 2605  
CCAAAGTAGTGGTCCATAAAGAGACAGAGATCACACCAGAAGATGGAGAGGATTGACCAG 2664  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1971 -----TCCTTAAA-----AC-----  
TGGAT----- 1985

Qy 2665  
AGGAATAACTTAGCTTGACATGAATGCAGTCATGCAAACCGTTAGGAAAACCAGAGCCT 2724  
| | | | | | | | | | | | | | | | | | | | | |  
|||  
Db 1986 -----TTAGCATGTTTCATGAAGG-----TG--AGCCG-----  
GCCTCATCCT 2020

Qy 2725  
ATATGGAGTTCCTCTTCTAACCCTGTACTTGTATCTGTCCGTGGAAAATTTTCAGTC 2784  
| | | | | | | | | | | | | | | | | | | | | |  
|||||  
Db 2021 AGT--GACTACCCCTCCTGATCC-----TCTTTGTG---GTAGGTGG--  
GGTCACAGTC 2068

Qy 2785 -CAGAAGAATTGACCTTGACCATTAATAAAGACACTGGCA-----  
GAGAGATCTTCCCA 2837  
| | | | | | | | | | | | | | | | | | | | | |

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Db 2069 TCTGAAG---TGAAAATGGTCAAAGATCTTG----  
TGGCATCGTTGAAGCCAGGAACCCA 2121

Qy 2838 --  
TAATAAAGCAATCTGATTGAGCATCACTAAACCGATAATGCATGAAGCAACGATAAAA 2895  
| | | | | | | | | | | | | | | | | | | | | |  
|



Db 2126 TTAC-CTGGGTTC--CTGGCT-TCAACGATGCCACAAGATCT---



Db 1627 TTTGTCTACCGTGAGC-----TCT---  
 CCAGTGACAGAATAAATATATATGAGA 1582

Qy 955 GGGGT-AGATTTACATCA-TGCT-AAGGACTCAGAAGGGGTAGAAATTAT--  
 GTTAGGAG 1009

Db 1581 AGGATCAGCAGTTCCTCAGGGCTGTAGTCCTC-----  
 GTTGGTTCTCTGGGTTACAGG 1529

Qy 1010 TTTGTGCAAGTG-GTCTGTTGATATATCGCGACCGGC--  
 TGCGAATAAACAGATTTGCCT 1066

Db 1528 CTTAATCATGGGCAGCAGCTGATTTAACACAACGGACATTGC-----  
 TGACT 1482

Qy 1067 GGCCCAAGGTTCTAAAGA-----  
 TTTCATACAAACGGAACAACCTTTACATTAAGATC 1119

Db 1481 -CCCCAATGCTCTGAAGAAGGAGCCTTTCA-AAAGCCAGAA-  
 AGTTGTCCCACTTGG--C 1427

Qy 1120 CGGCCGGGAGAGTTTGAACAATTTGAAAGC----ACCATTGGGTTTAAGCTGCC--  
 AAAC 1173

Db 1426 AGTCTGTGGGTGTTTCAAC-GTTTG--AGCTGTGGCCA----  
 GTCCAAGCTGGAGGAGGC 1374

Qy 1174 CATCGAGCTGCC-  
 AAGCGTTTATGGAAAGTATGTGTTGAGCATCATACATTTTTCAGAC- 1231

Db 1373 CACAATGATTTCATTAGAGCTTTGAGGTTGTTCTTGAAGAGCTGAATA-----  
 TAGGACA 1320

Qy 1232 --TACTGTTACCAGAAGCAC-  
 CTCCCAAGAAATTCTAACCTTGGGTTCCAAGTTTCGTT 1288

Db 1319 TGAGCTG-TCCCGGTGTGACTCTCCCA-----  
 TACTCATCTTGATTGGCAGGTTT---- 1270

Qy 1289  
 ATAGTGGCAGGACACAAGCGCAAACGAGAAGAGCCAGTGC GTTGATAGATCGCCCAGCAC 1348

Db 1269 -TCTCTGCTTGCCGCTTCC----ACTAGATGTCTCCGAACCTT-----  
 CCATCAC 1226

Qy 1349 --CTTACTTTGAACGCTCA---TCCAGCAAACGTTATAACCAT--  
 GTCTCGCAGCTTGGAT 1401

Db 1225 TGCCT-CTTTGT--GCTTAGTGTTTCAGTAAA-GCT-TCCCATAGGGCT-----  
 TTGGCT 1177

Qy 1402 GGAGCATCA-----

GTGAATGAAAACCATGAAATATACATGAAGGATTCTATGTCTGC 1454  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1176 GTGGTGTCACTGAATTGTGAAAGACAGCC-TGGTGCAACCAC-----  
ATTATAATTTTCC 1123

Qy 1455  
TGCAGAGGTTGGTACTGGCCAGTACGCCACAACAAAAGGCATCTCTCAGACCAACTTGAT 1514  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1122 TCCTCAGTATGG-AGTG--CAGTGAGC-----GCTATCATGTTAACC--  
AT 1082

Qy 1515 CACCAC---  
TGTGACTCCGGAGAAGAAGGCTGAGGAGGAGCGGGACGAGGAAGAGGAC-- 1569  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1081 CACATCATTTGTGTGGCCTGGGA-----GCTGGGGAAGTGC-----  
TGAAATGATCTT 1034

Qy 1570 --  
AAACGGAGGAAGGGGGAAGAAGTCACGCCCATCTCGGCCATCCAGCACGAGGGAAAGA 1627  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1033 CTCTAC-----TAAGTTGTCT---CCATGATGTCCA-  
ACTGCTC----- 999

Qy 1628 CTGACAGTGAGCGCACGGACACCGCAGCCGACGGGGAGACCACTG-  
CCACTGAGGAGCTA 1686  
| | | | | | | | | | | | | | | | | | | | | |  
Db 998 ----CTGTGAGATC-----CAGGGT-----  
TCTGTCCAC----- 974

Qy 1687  
GAAAAAACTCAAGATGACCTGATGAAACATCAAACCAACATTAGCGAGCTGAAAAGAACC 1746  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 973 --AAAAACCACTGATGCCCTG-----CCTGC-----  
AGCAGT-----C 943

Qy 1747  
TTCTTAGAAACCTCAACAGACACTGCCGTAACGAATGAATGGGAGAAGAGGCTTTCCACC 1806  
| | | | | | | | | | | | | | | | | | | | | |  
Db 942 TTCTT-----CCT----GTTCTTTGCAGGGGC--ATAATTGG-----  
CCAGA 907

Qy 1807  
TCCCCCGTGC GACTGGCCGCCAGGCAGGAGGATGCCCCCATGATCGAACCACTTGTCCCT 1866  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 906 TCCGC--AGCGA-TG---ACCTGACTTAAGGA-ACCTAC---  
AGCAAAACACTCCTCCCG 857

Qy 1867  
GAAGAGAAAATGGAAACCAAGACGGAGTCCAGTGGATAGAGACGGAACCCACCGTGCACC 1926  
| | | | | | | | | | | | | | | | | | | | | |  
Db 856 TACTCCTAAATGTTTAC----  
ACAGAGAACTGAGG----- 826

Qy 1927 ACCTGCCGCTTAGCA-  
CTGAGAAGGTGGTGCAGGAGACCGTGTGGTGGAGGAGCGGCGT 1985  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 825 -CCTGACACTAGGCATCTGATC-----TGCAG-----C-----  
AGCAGC-T 792

Qy 1986 GTGGTGCACGCG-  
AGTGGGGATGCTTCTTACTCGGCGGGAGACAGCGGGGATGCTGCAGC 2044  
||| | ||| |||| | || || | ||| ||

|  
Db 791 CTGGGGTTAGCGTAGTGGAG-----TCCACATCACC-----CAG-----  
GCTTC 753

Qy 2045 ACAGC--CCGCAT-TC---ACAGGCATTAAAGGGAAAGAGG-  
GCTCTGCTTGACGGAGGG 2097  
||| || | | || | ||| || || ||| || | | |

||  
Db 752 CCAGCTTCTCTTGTCCGGTCGGGCGCTATT---AAGGAGGTGCACATC----  
CTGGGGT 700

Qy 2098 GGCTAAAGAGGAAGGAGGGGAGGAGGTCGCTAAAGCT---  
GTCCTGGAACAGGAAGAGAC 2154  
|| | ||| | || || ||||| ||| || | ||

Db 699 AGC-----  
AGTGGGAAAAGGGATGCAAAAGCTGGAGTCAAGGCAAAG----- 658

Qy 2155  
AGCCGCTGCTTCCCGTGAGCGACAAGAGGAGCAGAGTGCAGCCATCCACATTTAGAAAC 2214  
|| | |||| || ||| || ||| || || |

||  
Db 657 -----TG-----GGGAGCAAC---AGGGGCA-----AGCAAT-AAC-----  
GGGAC 626

Qy 2215 TTTGGAACAAAAACCTCATTTTGAGTCCTCAACGGTGAAG---  
ACGGAAACCATCAGTTT 2271  
||||| |||| | ||| || | | ||||

Db 625 -ATGGAACA-----  
CCTCGGCCGTGTAGTTCATGTTGCCCATC----- 589

Qy 2272  
TGCGAGTGTTCACCGGGAGGAGTAAAGCTAGAAATTTCCACAAGAAGTGCCAGTAGTTC 2331  
|| |||| | |||| | ||| || ||| |

Db 588 ---CA---TTCAC-----ACAGCT-----TCTCCTCCAGC--  
TGCTCG-----A 558

Qy 2332  
ACACCGAAACCAAAACCATCACATATGAATCATCACAGGTCGATCCAGGCACAGATCTGG 2391  
||||| | || || |||| | ||| || | | |||

||||  
Db 557 ACACCGGCTGC-TGCCCTC-----CATCTC-GGCCG---CTGCCGCCG--  
CTGG 515

Qy 2392 AGCCAGGCGTGCTGATGAGTGCACAGAC---  
GATCACATCTGAAACCACAGTACCACCA 2448  
| | |||| ||||| | |||| || |||||

Db 514 GACATGATTAGCTGTGAGGTGGACAG-  
CGTGGCTCACGGTTGTGACCACCA----- 465

Qy 2449  
CCACTACCCACATCACCAAACTGTGAAAGGGGGCATTTCAGAGACAAGAATTGAGAAGC 2508  
|||| || || ||| | | | || || |

|



Db 464 -----CACAAATAC-----TGGAAGTG-----ACTGCGGCA--  
GATGATGTCCC 429

Qy 2509 GAATAGTCATCACGGGGGATGCAGACATTGACCATGACCAGGC-GCT-  
GGCTCAGGCAAT 2566  
| | | | | | | | | | | | | | | | | | | | |

Db 428 GTAGGATCTCCACGG----TCCGGCCTTT---CAG---  
CAGGCAGCTCAGCACAAACACT 379

Qy 2567  
TAAAGAGGCCAAAGAGCAGCACCCCTGACATGTCAGTGACCAAAGTAGTGGTCCATAAAGA 2626  
| | | | | | | | | | | | | | | | | | | | |  
Db 378 -----GCC-TTGGGCTGCT-----TGGC-----  
TCCA----- 358

Qy 2627  
GACAGAGATCACACCAGAAGATGGAGAGGATTGACCAGAGGAATAACTTAGCTTGACAT 2686  
| | | | | | | | | | | | | | | | | | | | |  
Db 357 -----CCACCA-----ATTG--CGTCGG-----  
GCTCGAAC-- 334

Qy 2687  
GAATGCAGTCATGCAAACCGTTAGGAAAACCAGAGCCATATGAGATTCCCTCTTCTAAC 2746  
| | | | | | | | | | | | | | | | | | | | |  
|  
Db 333 -----TCTCGCAG---GT---  
GACAGTCAGGGCC-----C 310

Qy 2747  
CCAACTGTACTTGTATCTGTCCGTGGAAAATTTTCAGTCCAGAAGAATTGACCTTGACCAT 2806  
| | | | | | | | | | | | | | | | | | | | |  
Db 309 CCCACCG-----CC-----TCCAGGAGACGGG---  
TGGATCC- 281

Qy 2807  
TAATAAGACACTGGCAGAGAGATCTTCCCATATAAAGCAATCTGATTCAGCATCACTA 2866  
| | | | | | | | | | | | | | | | | | | | |  
Db 280 -----GCAG-----CCCC---AGTGCAGGCT--  
CTCGGC----- 257

Qy 2867  
AACCGATAATGCATGAAGCAACGATAAAATTACAAAAGAGCAGCATTTTTTAATTTTCACA 2926  
| | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 256 -----GCAGGCGGCGTC-----CAGGTAAAC-----  
CACA 232

Qy 2927 AAATGTCTCAGTTT--  
TCAGCTATACCTGCTCGTTTCATAACCAACAATATAAACCGTGGT 2984  
| | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 231 GCCCGTTTCACTTTGGCCAGC---ACCTGCTC-----CCATCCTTG-----  
CTGGGT 188

Qy 2985  
CTCATGTAACACATAAACAATTCATGCCTTTTCATAGTTTATTATTATTAAAGTCTAAACA 3044  
| | | | | | | | | | | | | | | | | | | | |  
Db 187 ---AAAGGACA-GTACGCC---  
CGAGGCGCTCATGGTTGGGGATTG----- 149

Qy 3045  
 AAATTGCAATTTCTTAGGTAACCTTATATTTACAATAAATGAAGATTACCCTCAAATGCT 3104  
 ||| ||| || ||| ||| | | || | | | ||| |  
 ||  
 Db 148 -----GCAG--ACTTGGGAAAC-----TACGGTGCAGGA--ACTTCTTTCAGA--  
 ACT 107

Qy 3105  
 AGAAGCTGTCTAGGTCCGTCGGTGTGTCTAGATTTCTCAGATTAGATGTGCCAATAACC 3164  
 ||| |||| | | ||| | | ||| |||  
 ||  
 Db 106 CACCGCT-----TCCGGAATTGGG-----  
 CTCCGGGAGACTTTGACAGTCTCC 63

Qy 3165 A-AGTTTATTCAGTAAACAACCTTGTACTTG----  
 TTTCATCTGGTTTATTACTCTCACCC 3219  
 | ||| | |||| | | || || | ||| | | |||  
 Db 62  
 ACAGTACACCCAGTAGGCCAACAGTGCTCGAGGAATTCCGCAGCTTT----- 16

Qy 3220 ATAAACAGTAATGAC 3234  
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 Db 15 TAGAGCAGAAGTAAC 1

RESULT 7  
 US-10-478-914-20/c  
 ; Sequence 20, Application US/10478914  
 ; Patent No. 7335755  
 ; GENERAL INFORMATION:  
 ; APPLICANT: NAKAGAWARA, AKIRA  
 ; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
 ; FILE REFERENCE: 7388-80899  
 ; CURRENT APPLICATION NUMBER: US/10/478,914  
 ; CURRENT FILING DATE: 2003-11-26  
 ; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-162775  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-255226  
 ; PRIOR FILING DATE: 2001-08-24  
 ; NUMBER OF SEQ ID NOS: 417  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 20  
 ; LENGTH: 2495  
 ; TYPE: DNA  
 ; ORGANISM: Homo sapiens  
 US-10-478-914-20

Query Match 28.4%; Score 5535.5; DB 1; Length 2495;  
 Best Local Similarity 42.5%; Pred. No. 0;  
 Matches 1399; Conservative 0; Mismatches 988; Indels 905;  
 Gaps 191;

Qy 1  
 GCGGCGCGCCCGAGCCTAGTCCCCACGCCGCGGCGCGCCCGGGCTCCCTGCTGATCCCAG 60  
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 Db 2492 GCGGC---CGCGA-CCT-----GCAGC-  
 TCGAGCACATGTGGCCTTTTTTTTT---- 2451

Qy 61 AACAAATCAACCATG--  
ACGACCGAATCTGGATCAGACTCGGAATCCAAGCCGGACCAGGA 118  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2450 TTTTTTTTTTACATGTTTAAATATATTTTATTTCAAGTTAATATAAC-  
AGCC-----A 2400  
  
Qy 119  
GGCCGAGCCCCAGGAGGCGGCGGGGGCGCAGGGGCGGCGGGGGCCGTGCCGAGCCGCCC 178  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2399 TGATTTGTTTCATTTAAGT----GAAATGCT---TCGATAAAAACC---CCGGTGT--  
CAC 2352  
  
Qy 179 AAGGAGGAGCAGCAGCAGGCCCCCTGGAGCAGTT-  
CGCCGCCGCTGCAGCGCACAGCACCCC 237  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2351 TTGGTTAAATATTGGAGACAGATTAAATGTTAAGCCACTATAGTAGTG-----  
ACTCT 2298  
  
Qy 238 GGTGCGAGGGAGGTCAGTACAAGGAACAGGAGTTTG--  
CTGCCAGGGCTGCAAAACAGC 295  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2297 GGTTCCTTTAGA---CTATTGCATGTACCTTGTTAATGAAGT-  
ACAGGAATGCACA----- 2247  
  
Qy 296  
TCGAATATCAGCAATTAGAAGACGATAAACTTTCTCAGAAATCATCTAGCAGTAAACTCT 355  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 2246 TTGATATAATGCA---CAATGTC-TTCACATGTCTC---AATCCTCATTC-----  
CT 2202  
  
Qy 356 CTCGGTCTCCATTAAAGATTGTCAAAAAGCCTAAAAGCATGCAGTG--  
CAAAGTGATACT 413  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 2201 CT-----TCCTTTTCATGCCT-----CCCTAATGCCT-  
CAGTATCCAATATAAACT 2157  
  
Qy 414  
TCTCGATGGATCAGAATATACCTGTGATGTAGAGAAACGCTCCAGAGGACAAGTGCTGTT 473  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 2156 AC-----AAAACTAC-----  
TGTTCTTTT 2137  
  
Qy 474  
TGATAAAGTGTGTGAACACTTGAACCTTGCTAGAGAAAGACTACTTTGGGCTTACGTATCG 533  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2136 CGTTTGAGTG-GTATTTAATTAATAAACTTC-----  
AATTCTATGTTATTTT----- 2093  
  
Qy 534  
AGATGCTGAAAACCAGAAGAATTGGTTGGACCCTGCTAAGGAAATAAAAAACAGGTTTCG 593  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2092 ---CACAG---TCCAGTA-ATTTATTTTAAATTTG--

AGTAATTTCAAATTCACAAACA 2042

Qy 594 AAG-  
TGGTGCTTGGCACTTTTTCATTTAATGTGAAATTTTATCCACCAGACCCTGCCCAAC 652  
|| || | ||| | |||| | |||| | || | || || ||  
Db 2041 AAACGAAGAAGCAAT----ATTTTGTGTTGAATTTCTCTCTTCTGTACT--  
CAGT 1989

Qy 653  
TATCTGAAGATATCACCAGGTACTACCTCTGCTTGCAGTTGCGAGATGACATCGTGTCCG 712  
|||| | | ||| | | ||| | | ||| | | ||  
|  
Db 1988 GATCT-AAAACACCACAATATCCAACATACACAAACC--  
TCAGGGAAGGTTAGTAAAC- 1933

Qy 713 GAAGGCTGCCCTGCTCCTTTGTTACCCTGGC-CTTGCTGGGCTCCT-----  
ACACTGTC- 765  
| | ||| | | ||| || || |||||  
|||  
Db 1932 -----ACACACAAGATTGGAATCATGGTGCT--  
CTTTGCTCCTGAATGGAATGGTCC 1883

Qy 766 --CAGTCAGAGCTCGGAGACTATGACCCAGATGAATGTGGG-AGCGATTACAT---  
TAGT 819  
||| | ||| | || || | || || ||| | | |||||  
|||  
Db 1882 CACAGAAAAGCAC--AGGATACAGCACA---  
ACATAAGGGCACCTGTTACATATGAAGT 1828

Qy 820 GAGTTCCGCTTTGCACCAAACCACACTA--  
AAGAACTGGAAGACAAAGTGATCGAGCTGC 877  
||| |||| || |||| | || | | || | || | ||  
|  
Db 1827 GAG-----CAAAACATACTAGCATTTTCTATATG-CATAATG---  
GGGAAAC 1785

Qy 878  
ACAAGAGCCACAGAGGAATGACGCCAGCAGAAGCAGAGATGCATTTCTTGAAAATGCC- 936  
| || ||| ||| | ||| | | | ||| ||| ||  
|  
Db 1784 -----  
CTGCATAGGTTAGAGGCCTTTTACGCTCATTTAAAAATCAGGCAAGTTGTCT 1732

Qy 937 -  
AAAAAATTATCAATGTATGGGGTAGATTTACATCATGCTAAGGACTCAGAAGGGGTAGA 995  
|| | || |||| ||| || | || || | ||  
||  
Db 1731 GTAACATTTTCAATAATCTGGGAAGCACTGCA--ATCCAGTGTAC-----  
GA 1686

Qy 996  
AATTATGTTAGGAGTTTGTGCAAGTGGTCTGTTGATATATCGCGACCGGCTGCGAATAAA 1055  
| || | ||| |||| ||| | | |||  
|  
Db 1685 TGTGCTGATTAGTGTT-----GTCT-TTGTT-----GGC--  
ACTG-----A 1653

Qy 1056 CAGATTTGCCTGG-C-----CCAAGGTT----  
CTAAAGATTTTATACAAACGGAACAAC 1105  
||| |||| ||| | ||| ||| || || ||| |||

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|
Db          1652
CAGTCTTGCATGGTCATATGCCAGTGTTTTTGCTTTAGCTTTTCTTTGAATAAAACAGAT 1593

Qy          1106 TT---
TACATTAAGATCCGGCCGGGAGAGTTTGAACAATTTGAAAGCACCATTGGGTTTA 1162
      ||  |  ||||  |||  |  ||  ||||  ||||
|||||
Db          1592 TTAAATGCATTTAGA-CAATACG-----TATTTGTAAGCT-----
GTTTA 1554

Qy          1163
AGCTGCCAAACCATCGAGCTGCCAAGCGTTTATGGAAAGTATGTGTTGAGCATCATACAT 1222
      || ||  |  |  |  |||  ||  |  |||  |  |||  || |
|
Db          1553 -----CATACACTAAATTT---AAGAGATT-----CAATAT---
TAGAGTTTCTTTGTT 1511

Qy          1223
TTTTCAGACTACTGTTACCAGAAGCACCTCCCAAGAAATTCCTAACCTTGGGTTCCAAGT 1282
      |  ||  |  ||  ||  |||  |||  |  ||  |  |||  |||
||
Db          1510 TCTTTAAAC-AC---TACAGAGTGCAAAT--CAGGTTCTTCACAAC-----
AGA 1468

Qy          1283
TTCGTTATAGTGGCAGGACACAAGCGCAAACGAGAAGAGCCAGTGCGTTGATAGATCGCC 1342
      ||  |||  |  ||||  |  |  ||||  ||  |  |  ||  |  |
|||
Db          1467 TTGAATATTG-AGCAGTTCTTTA-----
AAGAAAGAGGGGGAAGAAAAAAGCC 1420

Qy          1343 CA---
GCACCTTACTTTGAACGCTCATCCAGCAAACGTTATACCATGTCTCGCAGCTTGG 1399
      ||  |  |  ||  ||||  ||  |||  |  ||  |  ||  ||
Db          1419 CAAGTGAATAAAACATTGAA-ACTATTCC--CCTTCGAAAATAAAT-----
TCTAAA 1371

Qy          1400
ATGGAGCATCAGTGAATGAAAACCATGAAATATACATGAAGGATTCTATGTCTGCTGCAG 1459
      |||  |  ||||  ||  |  |  |  ||||  |  |  ||  |  || |
|
Db          1370 ATGATGTG-----GAATGTGAAATAAGGTTTTTAACAT-AGGTGATCCAAGTTT-----
AT 1322

Qy          1460 AGGTTGGTACTGGC--CAGTACGCCAC-
AACAAAAGGCATCTCTCAGACCAACTTG---- 1512
      ||  |  ||  |||  |  ||  ||  ||||  |  |||  ||  |||
Db          1321 AGTTAGAAACAAAAAGAAGTCCTTCATGAAATAAAGGTTAC---
AAGAACACGTTGCCTG 1265

Qy          1513 -ATCACCCTGTGACTCCGGAGAAGAAGGCTGAGGAGGAG---CGGGACGAGGA-
AGAGG 1567
      |  ||  |  |  |  ||||  ||  ||  |  |  |  ||||  |  ||
|
Db          1264
TTTTCCCCATTATAAACTGAGAAGTGGGTAAAGACGATGTTTCAGTACGAAAATAGGTG 1205

Qy          1568 ACAAACGGAGGAAGGGGGAAGAAGTCA-CGC-
CCATCTCGGCCATCCAGCACGAGGGAAA 1625

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|||  
 Db 1204 ACTACAGGA-----TCAGCGCTTCATCTC--ACATGCTGTACCC---  
 AAA 1165

Qy 1626 GACTGACAGTGAGCGCACGGACACCGCAGCCG-  
 ACGGGGAGACCACTGCCACTGAGGAGC 1684

|||  
 Db 1164 GCCAGGCTGTG-----GCTGTCCATACGGTGGTGCGGTATAACCATAACCA-  
 AAAGGTGC 1111

Qy 1685  
 TAGAAAAAAGCTCAAGATGACCTGATGAAACATCAAACCAACATTAGCGAGCTGAAAAGAA 1744

|||  
 Db 1110 -----CTGGGGAGGGACGG-----CAACA-----CTG-----  
 GGT 1086

Qy 1745 CCTTCTTAGAAACCTCAACAGACACTG-CCGTAACGAATGAAT--  
 GGGAGAAGAGGCT-- 1799

|||  
 Db 1085 CCTGC-  
 TGTCAGCATCAACTGGGGCTGACCATAAACAATGGGTTGTGTCTCTGTAGCTTG 1027

Qy 1800 TTCCACCTC----CCCCGTGCGACTG--  
 GCCGCCAGGCAGGAGGATGCCCCATGATC-- 1851

|||  
 Db 1026 TTCTTCTTCTTTTCTCAGTGATTCTGAAGCATCTA-----  
 ATTTATCCACCTTTGTCAA 973

Qy 1852 GAACCACT---  
 TGTCCCTGAAGAGAAAATGGAAACCAAGACGGAGTCCAGTGGATAGAGA 1908

|  
 Db 972 GTACTCCTTCATGACCTGGATGA-AATAGGG----  
 CATGGCAAAATCCATGATATTGTG- 919

Qy 1909 CGGAACCCACCGTGCACCACT-----GCCGCTTAGCACTGAGAAGGTGGT-  
 GCAGGAGA 1962

|||  
 Db 918 -----CCTCCATGCAGTTTCTAGGACGACATCTGGC-  
 CTTAAAAGATCGTAACAGGTAA 866

Qy 1963 CCGTGTTGGTGGAGGAGCGGCGTGTGGTGACGCGAGTGGGGATGCTTCTTACT--  
 CGGC 2020

|||  
 Db 865 AC-----AGACAAGCTCC-----AAAGCACTC-----  
 TCTTTTTTCTTCTGC 828

Qy 2021 GGGAG--  
 ACAGCGGGGATGCTGCGAGCACAGCCCGCATTACAGGCATTAAAGGGAAAGAG 2078

|||  
 Db 827 AAAAACCCTGCAGGAGTTCTTCAGC-CA-----ATTAGTATCTTT--  
 AGATTAGAA 777

Qy 2079 GGCT-  
 CTGCTTGACGGAGGGGGCTAAAGAGGAAGGAGGGGAGGAGGTGCTAAAGCTGTC 2137

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| | | | | | | | | |
| | | | |
Db      776 GCATACTGCATTGCATC-----CTT-----
GTAAAGGCTGTC 745

Qy      2138 ---CTGGAACAGGAAGAGACAGC-CGCTGCTTCCCGTGA--
GCGACAAGAGGAGCAGAGT 2191
| | | | | | | | | | | | | | | |
Db      744 TTTCTTGCACAG-----
CTCTACACTCTGTTTCCAGCGATTGTTGCCTTTGAAGAGATAA 690

Qy      2192
GCAGCCATCCACATTTTCAGAACTTTGGAACAAAAACCTCATTTTGTAGTCCTCAACGGTG 2251
| | | | | | | | | | | | | | | |
| |
Db      689 GCAGCAATTCTCCT-----GAACT-----CAATGAGTTCATGTT-TTTCC-
AAACGCTG 643

Qy      2252 AAGACGGAAACCATCAGTTTTTGGCAGTGTT-
TCACCGGGAGGAGTAAAGCTAGAAATTTT 2310
| | | | | | | | | | | | | | | |
|
Db      642 A----GCAAGCGA--GATATTGTCAAAGTTGTCATAAG-----
CATCTATTGATGTT 597

Qy      2311 CACAAGAAGTGCCAGTAGTTC--
ACACCGAAACCAAAACCATCACATATGAATCATCACA 2368
| | | | | | | | | | | | | | | |
Db      596 CGC----AGAGCCTGATAATCTTCTTCTGTAATAAAAA-----
GATTGTTCAAT 552

Qy      2369 GGTCGATCCAGGCACAGATCTGGAGCCAGGCGTGCTGA--
TGAGTGCACAGACGATCACA 2426
| | | | | | | | | | | | | | | |
Db      551 ----GATTCATTACAGATTTGTTGTTATG-
GTTCTGAAGTGAACGCAAATACGGT---- 501

Qy      2427
TCTGAAACCACCAGTACCACCACCACTACCCACATCACCAAACTGTGAAAGGGGGGCATT 2486
| | | | | | | | | | | | | | | |
| |
Db      500 -----TTCACCAGTG-----GTAGCTGTTTAA-----
CCTT 475

Qy      2487
TCAGAGACAAGAATTGAGAAGCGAATAGTCATCACGGGGGATGCAGACATTGACCATGAC 2546
| | | | | | | | | | | | | | | |
| | |
Db      474 GCTGA---AATAATTGA-----CTGCACGAGTG-----
TGAT 446

Qy      2547 CAGGCGCTGGCTCAGGCAATTAAAGAGGCCAAAGAG-CAGCACCTGA-
CATGTCAGTGA 2604
| | | | | | | | | | | | | | | |
|
Db      445 C-----CAA-----
CCGTGGAGACAGCACCATCAGCAAATCATTTA 410

Qy      2605 CCAAAGTAGTGGTCCATAAAGAGAC-
AGAGATCACACCAGAAGATGGAGAGGATTGACCA 2663

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|  
 Db 409 ACA-----ACAGAGGCTTGAATTCT-----  
 AAGTAGAACTGTATTGCTCT 370

Qy 2664  
 GAGGAATAACTTAGCTTGCACATGAATGCAGTCATGCAAACCGTTAGGAAAACCAGAGCC 2723  
 | | || | || || | || | || | || |  
 Db 369 GTAGTATAG-----TTCCACAT--TGGCAACCTTG-----  
 GTAATGATATC----- 331

Qy 2724 TATATGGAGTTCCCTCTTCTAACCCAACTGTACTTGTATCTGTC--  
 CGTGGAATAATTT-- 2779  
 | | | | | || | | | | | | | | | |  
 Db 330 --TTTGAATTGCC--  
 CTTCTTTCCAGGCATCAGTTGGATGATTATCATGTAATTATGG 275

Qy 2780 CAGTC-  
 CAGAAGAATTGACCTTGACCATTAAATAAGACACTGGCAGAGAGATCTTCCCAT 2838  
 | | | | | | | | | | | | | | | |  
 ||||  
 Db 274 CATTATCATATTCTTCATACTTGTC---ATACAAAACAC---C---  
 AGTTCTGCCCAA 225

Qy 2839  
 AATAAAGCAATCTGATTGAGCATCACTAAACCGATAATGCATGAAGCAACGATAAAATTA 2898  
 | | | | | | | | | | | | | |  
 Db 224 AGATGAG----  
 CTTGTTCTGCAGCTCTTAGC----- 198

Qy 2899  
 CAAAAGAGCAGCATTTTTAATTTTACAAAATGTCTCAGTTTTTCAGCTATACCTGCTCGT 2958  
 | | | | | | | | | | | | | | |  
 Db 197 -----ACCTTGGGAATATTCACT-----  
 CTAGACCAG----- 171

Qy 2959  
 TCATAACCAACAATATAAACCGTGGTCTCATGTAACACATAAACAATTCATGCCTTTTCAT 3018  
 | | | | | | | | | | | | | | |  
 Db 170 -----AACAGC-----TCCAGGTGCTC-----CCTCAT-----  
 TTTCTG 142

Qy 3019  
 AGTTTATTATTATTAAAGTCTAAACAAAATTGCAATTTCTTAGGTAACCTTATATTTACA 3078  
 | | | | | | | | | | | | | | | |  
 |  
 Db 141 AG--GCTTAAATTTAGAGTAT----AGAATAGCTAATTC---AGTAAAC-----  
 ATTCCC 96

Qy 3079 ATAAATGAAGATTACCCTCAAATGCTAGAAGCTGTCTAGGTCCGTCC-  
 GGTGTGTCAGAT 3137  
 | | | | | | | | | | | | | | | |  
 Db 95 AT-----GTGAGCTCGCTCAAGTCCCAG-TGCTG-CT---TCCAACATGGTG-  
 ATCAGC- 48

Qy 3138 TTCCTCAGATTAGATGTGCCAATAACCAAGTT-TATTCAGTAAACAACCTTGT 3188  
 | | | | | | | | | | | | | | | |  
 Db 47 -TCTTCAAATA-----GCCACGATCCTGATAGTAGCCAGTAGGCCAACAGT 2



RESULT 8

US-10-478-914-64

```
; Sequence 64, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 64
; LENGTH: 2120
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-64
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Query Match          28.1%; Score 5468.5; DB 1; Length 2120;
Best Local Similarity 41.6%; Pred. No. 0;
Matches 1334; Conservative 0; Mismatches 710; Indels 1161;
Gaps 198;
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```
Qy          3 GGC GCGCCCCGAGCCTAGTCCCCACGCCGCGGCGCGCC-
CGGGCTCCCTGCTGATCCCAGA 61
      ||| | || |   || | | |   || ||| | |||   |
||
Db          3 GGCCTGTACG-GAAGTGTTACTTCTGCTCTAAAAGCTGCGGAATTCCT-----
CGAGC 54
```

```
Qy          62 ACAATCAACCATGACGACCGAA--
TCTGGATCAGACTCGGAATCCAAGCCGGACCAGGAG 119
      || | ||   || | | | ||| | || | ||| | |||
Db          55 ACTGTTGGCCT-----ACTGGAGTGCTGAAGTAGGCGCGGA---
CGTGCC----- 96
```

```
Qy          120
GCCGAGCCCCAGGAGGCGGGGCGCAGGGGCGGCGGGGGCCGTGCCGAGCCGCCCA 179
      | | |||   ||| ||| || ||||| || ||| | || ||||| | |
|||
Db          97 -CGGTGCC-----TGGC-GCGTGGTAGCAGGCGC-
CCGGTGCCCCCGGCCGGCGAAGACCA 148
```

```
Qy          180 AGGAGGAGCAGCAGCAGGCCCTGGAGCAGTTGCGCCGCC-
GCTGCAGCGCACAGCACCCC- 237
      || | | | | | | | | | | | | | | | | | | | | | |
Db          149 TGGCGTTCATGGTGAAGACCATGGTG-----GGCGGCCAGCTGAAGAAC-----
CTCACTG 199
```

```
Qy          238
GGTGCGAGGGAGGTCACTGACAAGGAACAGGAGTTTGCTGCCAGGGCTGCAAAACAGCTC 297
      || || ||||| | | |||| |||   || | || | | | | ||||
|
Db          200 GGAGCCTGGGAGG----CGGCGAGGATAAGGGAGATGGGGACAAGTCGG-----
```

CAGC-C 249

Qy 298  
GAATATCAGCAATTAGAAGACGATAAACTTTCTCAGAAATCATCTAGCAGTAAACTCTCT 357  
||| ||| | | | | | | | | |  
Db 250 GAAGCTCAG-----GGC-ATGAGC-----CGGG-----  
AGGAGTA----- 278

Qy 358  
CGGTCTCCATTAAAGATTGTCAAAAAGCCTAAAAGCATGCAGTGCAAAGTGATACTTCTC 417  
|| | | | | | | | | | | | |  
Db 279 CG-----AGGAGTATC-----AGAAGCAACTCGTG-  
GAAGAGA-----A 311

Qy 418  
GATGGATCAGAATATACCTGTGATGTAGAGAAACGCTCCAGAGGACAAGTGCTGTTTGAT 477  
||| | | | | | | | | | | | | | |  
Db 312 GATGGAGCGGGATGCACAGTTCACACAGAGGAAGGC-----AGAGCGG---  
GCC 357

Qy 478 AAAGTGTGTGAACACTTGAACCTTGCTAGAGAAAGACTACTTTGGGCTTAC--  
GTATCGAG 535  
| | | | | | | | | | | | | | | |  
|||  
Db 358 AACTGCG-GAGC-----CACTTCCGAGACAAATAC--C----  
GGCTACCCAAGAACGAG 405

Qy 536 A-TGCTGAAAACCAGAAGAATTGGTTGGACCCTGCTAAGGAAATAAAAAACAGGT-  
TCG 593  
| | | | | | | | | | | | | | | |  
|  
Db 406 ACAGATGAGAGCCAGAT-----CCAGAT--GG-----  
CAGGTGGAG 439

Qy 594  
AAGTGGTGTCTTGGCACTTTTCATTTAATGTGAAATTTTATCCACCAGACCCTGCCCAACT 653  
| | | | | | | | | | | | | | | |  
|  
Db 440 ACGTGGAGCT-----  
GCCCCGGGAGCTGGCCAAGAT 470

Qy 654  
ATCTGAAGATATCACCAGGTACTACCTCTGCTTGCAGTTGCGAGATGACATCGTGTCC-- 711  
|| | | | | | | | | | | | | | | |  
Db 471 GATCGAGGAGGACACAGAGGA-----GGAGGAG-GAGAAGGCCTC-  
AGTCCTT 516

Qy 712 GGAAGGCTGCCCTGCTCCTTTGTTACCCTGGCCTTG---CTGGGCTC-CT-----  
ACACT 762  
|| | | | | | | | | | | | | | | | |  
Db 517 GGGCAGCTGGCCAG--CCTT-----CCTGG-  
CTTGAACCTGGGCTCACTCAAGGACAAG 567

Qy 763 GTCCAGTCAGAGCTCGGAGA-CTATGACC--  
CAGATGAATGTGGGAGCGATTACATTA-G 818  
| | | | | | | | | | | | | | | |  
|  
Db 568 GCCCAGGCCACACTGGGGGATCTCAAGCAATCAGCTGA-----GAAGTG-  
TCACGTCATG 621

Qy 819 TGAGTTCCGCTTTGCACC----  
AAACCACACTAAAGAAGCTGGAAGACAAAGTGATCGAGC 874  
||| || ||| | || ||| ||| | ||| ||| |  
||  
Db 622 TGA---CCACTT--CCCCGGGGTTACC-CACT---GGGCTGG--GCCCCATGA--  
GGGC 668

Qy 875  
TGCACAAGAGCCACAGAGGAATGACGCCAGCAGAAGCAGAGATGCATTTCTTGAAAATG 934  
| ||| | || | | ||| || || ||  
Db 669 T----AAGA-----GTGTGTCAACTTC-----CAGGGACCCA-  
TACT----- 700

Qy 935 CCAAAAAATTATCAATGTATGGGG-  
TAGATTTACATCATGCTAAGGACTCAGAAGGGGTA 993  
||| | |||| | ||| | ||| | ||  
Db 701 CCA-----TTTGGGGCTTTGTTTCC--CTTGC-----  
CCCA----- 729

Qy 994  
GAAATTATGTTAGGAGTTTGTGCAAGTGGTCTGTTGATATATCGCGACCGGCTGCGAATA 1053  
| ||| || || ||| || ||  
Db 730 -----TCCTAGT--TCC-AAGACCTTTCCCATCC--  
ATGC----- 759

Qy 1054  
AACAGATTTGCCTGGCCCAAGGTTCTAAAGATTTTCATACAAACGGAACAACCTTTTACATT 1113  
| || ||| | || | |||| |  
Db 760 --C-----CCAAGCCTA----  
TCTTCTGGTTTCTTCT-- 786

Qy 1114  
AAGATCCGGCCGGGAGAGTTTGAACAATTTGAAAGCACCATTGGGTTTAAGCTGCCAAAC 1173  
||| || |||| | || | |||| || | ||  
|  
Db 787 ---CTCC-GCTGGGAG-----TAAAGTCCCCATC---  
TTCCTCTAC----C 822

Qy 1174 CATCGAG---  
CTGCCAAGCGTTTATGGAAAGTATGTGTTGAGCATCATACATTTTTCAGA 1230  
| || | || || | | || |||| | || || | ||  
||  
Db 823 CTTCAGGACCTCCCCACC-----AGCTCAGCCTGTGGAG-  
GCCTCCCAAGATTGTAGGA 876

Qy 1231  
CTACTGTTACCAGAAGCACCTCCCAAGAAATTCCTAACCTTGGGTTCCAAGTTTCGTTAT 1290  
| || | |||| | || || |||| ||  
Db 877 AT-----AGGCCCATCCC-----TCTCTGGCCAT-GGCCCAAG-  
TTC----- 912

Qy 1291  
AGTGGCAGGACACAAGCGCAAACGAGAAGAGCCAGTGC GTTGTATAGATCGCCCAGCACCT 1350  
| | |||| | || | |||| || | ||  
Db 913 -----CTGCACACAGGAGCACCCACAGAGAGACA-----  
CACACA----- 947

Qy 1351  
TACTTTGAACGCTCATCCAGCAAACGTTATACCATGTCTCGCAGCTTGATGGAGCATCA 1410  
| || | | || || || || ||

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||||
Db          948  -----GGACACAAAAC-----CCCTGGCACG-----
TTCA 972

Qy          1411
GTGAATGAAAACCATGAAATATACATGAAGGATTCTATGTCTGCTGCAGAGGTTGGTACT 1470
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          973  GAGACAGAAGCCACAGACACATCC-----
CGGCA----- 1001

Qy          1471
GGCCAGTACGCCACAACAAAAGGCATCTCTCAGACCAACTTGATCACCCTGTGACTCCG 1530
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|||||
Db          1002  ---CAGACAGACAC-ACACGAGGC-----CAG-----
CTCC- 1028

Qy          1531
GAGAAGAAGGCTGAGGAGGAGCGGGACGAGGAAGAGGACAAACGGAGGAAGGGGGAAGAA 1590
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1029  -----CT-----
TGCG-----T 1035

Qy          1591  GTCACGCCCATCTCGGCCATCCAGCACGAGGGAAAGACTGACAGTGAGC--
GCACGGACA 1648
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|||||
Db          1036  GTCCAGCCCCTC-CAGACA-CCACCACTC-
AGAAACTCTGAGAGAGAGCATGGGCAGACA 1092

Qy          1649  -
CCGCAGCCGACGGGGAGACCACTGCCACTGAGGAGCTAGAAAAAACTCAAGATGACCTG 1707
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|
Db          1093  CCCTCAGCAGAC-AGGAGGCCT-----GAGTT-----
CCAG 1122

Qy          1708
ATGAAACATCAAACCAACATTAGCGAGCTGAAAAGAACCTTCTTAGAAACCTCAACAGAC 1767
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
||
Db          1123  -----TC--TCCACCTTTATTGTTCTTGAAAGCCCCTGCT-----CTC-
TCTGA- 1163

Qy          1768
ACTGCCGTAACGAATGAATGGGAGAAGAGGCTTTCCACCTCCCCCGTGC GACTGGCCGCC 1827
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          1164  ---GCCTTA-----TTTCATCATC-----
TGTA----- 1184

Qy          1828
AGGCAGGAGGATGCCCCCATGATCGAACCACCTTGTCCTGAAGAGAAAAATGGAAACCAAG 1887
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|||
Db          1185  ---AATGGGAATGTCC---TGAATG---ACTT-----
CTAAG 1212

Qy          1888  ACGGAGTCCAGTGGATAGA---
GACGGAACCCACCGTGCAACACCTGCCGCTTAGCACTG 1944
      | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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||  
Db 1213 GCTCTTTC---TGGCTTGAAGTGTGAGAGCCAAGC-----CCACATCCCTC-----  
CT- 1257

Qy 1945  
AGAAGGTGGTGCAGGAGACCGTGTGGTGGAGGAGCGGCGTGTGGTGCACGCGAGTGGGG 2004  
||| ||||| | ||| || |||  
Db 1258 -----TGG-GCAGG-----GCAGCAGC-----  
TGC----- 1276

Qy 2005  
ATGCTTCTTACTCGGCGGGAGACAGCGGGGATGCTGCAGCACAGCCCGCATTACAGGCA 2064  
||| | ||| ||||| ||||| ||||| |||  
Db 1277 -TGCCACAGCCTC-----CAGCG-----GCTGC-----  
CAC----- 1301

Qy 2065 TTAAAGGGAAAGAGGGCTCTGCTTGACGGAG-  
GGGGCTAAAGAGGAAGGAGGGGAGGAGG 2123  
| ||||| | |||| | || | ||| ||  
|||  
Db 1302 -----TGTGGGCTCTGGGAGCCGGAGCGATGCT-----  
GTGTGAGAGGCAGAGT 1345

Qy 2124 TC---  
GCTAAAGCTGTCTTGGAACAGGAAGAGACAGCCGCTGCTTCCCGTGAGCGACAA 2179  
| | ||||| | ||||| ||| | | ||| ||| |  
Db 1346 GCCAAGGATGAAGCTGGCACTGAACAGTAAGCGGCTCCAG--GCCTCCTCTGGGC--  
C-- 1399

Qy 2180  
GAGGAGCAGAGTGCAGCCATCCACATTTTCAAGAACTTTGGAACAAAACCTCATTTTGTAG 2239  
||| | ||||| | ||| | ||| ||| ||| |  
||  
Db 1400 -----CAGGGCCCAGCCAATTTCTGTTCTGTTCTGTAGAACG-----CTC-  
TCTGGAT 1447

Qy 2240 TCCTCAACGGTGAAGACGGAAAC-  
CATCAGTTTTGGCAGTGTTCACCGGGAGGAGTAAA 2298  
||| | | |||| | || | ||| || |||  
||  
Db 1448 TCCATAGC-----TGGAATCTCCTC--TCTTAGC-----TC-----  
AGTGAA 1482

Qy 2299  
GCTAGAAATTTCCACAAGAAGTGCCAGTAGTTCACACCGAAACCAAACCATCACATATG 2358  
||| | ||| | | |||| | ||| ||| ||  
Db 1483 AAATAAAATCCCAAATGGTGTGCC-----  
TACCTTCCCA--- 1517

Qy 2359  
AATCATCACAGGTCGATCCAGGCACAGATCTGGAGCCAGGCGTGTGATGAGTGCACAGA 2418  
| || | |||| | |||| || ||| ||| ||  
||  
Db 1518 ---CTTC-----TTACTGGCTT-----CCAGGAGTCTTG--  
GAGTTCATAGC 1554

Qy 2419 CGATCACATCTGAAACC--ACCAGTACCACCACCACTACCCACAT-  
CACCAAACTG--T 2473  
| | ||| || | | || |||| |||| | || | |||  
Db 1555 CCCCCGAGCCTG---

CCTTAAAGGGGTGTCCTCCACCCCCACCTACAGCTTCACAGGAG 1611

Qy 2474 GAAAGGGGGCATTTCAGAGACAAGAATTGAGAAGCGAAT-----  
AGTCATCACGGG-- 2524

| | | | | | | | | | | | | | | | | | | | | |  
Db 1612 GGGAGAGGGCA-TCCAGTGCTAGGAGT--  
AGAAGTGTCTCCAGCTCTGTTCTCTTGGGGC 1668

Qy 2525 ---GGATGCAGACATTGACCATGAC-  
CAGGCGCTGGCTCAGGCAATTAAAGAGGCCAAAG 2580

| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1669 CCTGGGTGAAGGTGGGGTCTGGGGCTTATGAAATAGGTCTGGGCTTTGAGGAGG--  
ATGG 1726

Qy 2581 AGCAGCACCTGACATGTCAGTGACCAAAGTAGTGGTCCATAAAGAG--  
ACAGAGATCAC 2638

| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 1727 AGCAGCCTCAT--TATGTGGG-----  
GAAGATGGGGCCTCTGGGGCGTCACTGAGACCAC 1779

Qy 2639  
ACCAGAAGATGGAGAGGATTGACCAGAGGAATAACTTAGCTTGACATGAATGCAGTCAT 2698

| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1780 A-----GGTGGG-----CCGGG-----CTGGAC---CGCA-----  
GCTGTCTT 1811

Qy 2699  
GCAAACCGTTAGGAAAACCAGAGCCTATATGGAGTTCCCTCTTCTAACCCAACTGTACTT 2758

| | | | | | | | | | | | | | | | | | | | | |  
Db 1812 G-----GG--TGCCTGTGCCT-----GCACCC-  
CTCCTCACCC----- 1841

Qy 2759  
GTATCTGTCCGTGGAAAATTTTCAGTCCAGAAGAATTGACCTTGACCATTAATAAAGACAC 2818

| | | | | | | | | | | | | | | | | | | | | |  
Db 1842 -----TAGAGA-----CGGAAGATGTG-----  
CAAAAAGAAAGA--- 1870

Qy 2819  
TGGCAGAGAGATCTTCCATAATAAAGCAATCTGATTGAGCATCACTAAACCGATAATGC 2878

| | | | | | | | | | | | | | | | | | | | | |  
Db 1871 ----AGGAAGGGCAAC-----TGCATTC-----  
CAGCCCCAC----- 1898

Qy 2879  
ATGAAGCAACGATAAAATTACAAAAGAGCAGCATTTTTTAATTTTCACAAAATGTCTCAGT 2938

| | | | | | | | | | | | | | | | | | | | | |  
Db 1899 -----ACTGTGATGACTTT-----GAGCC-----TGTCTTTCC-----  
CTCC-- 1931

Qy 2939  
TTTCAGCTATACCTGCTCGTTTCATAACCAACAATATAAACCGTGGTCTCATGTAACACAT 2998

| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 1932 -TTGAGCCTGTCTTGCTTGTCC----CCTGTAAAATGAACAGT--  
CCCCCTCTCCCCAA 1984

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Qy          2999 A----AACAAATTCATGCCTTTTCATA-GTTTATTATTATTAAAGTCTA-AACAAA--
ATTG 3050
          |      || ||| ||||  ||||| | | | |  |||  |||||  ||  |||||  ||
Db          1985 ATAGTAATAATACATG--
TTTCAAAGGGTGACCATTTTATAAAGCATATGACAAACCATAT 2042

Qy          3051 CAATTTCTTAGGTAAAC-
CTTATATTTACAATAAATGAAGATTACCCTCAAATGCTAGAAG 3109
          ||||  |  ||||| | |  |||| || |||  || |  || ||  |||| |
||
Db          2043 CAATAAAT---GTAAGTCATTCTTTTAAAAAAAAAAAAAAAAAAGGCCACATGTGCTCG-
AG 2098

Qy          3110 CTGTCTAGGTC-CGTCCGGTGTGTC 3133
          |||  ||||| || ||| | |
Db          2099 CTG--CAGGTCGCGGCCGCT-AGAC 2120

```

Qy 147 CAGGGGCGGCGGGGGCCGTGCCGGAGCC-----  
GCCCAAGGAGGAGCAGCAGCAGG 197  
| | | | | | | | | | | | | | | | | |

Db 101  
TGTTTACTGAATTAGCTATTCTATACTCTAAATTTAAGCCTCAGAAAATGAGGGAGCA-- 158

Qy 198  
CCCTGGAGCAGTTCGCCGCGCTGCAGCGCACAGCACCCCGGTGCGAGGGAGGTCCTGA 257  
| | | | | | | | | | | | | | | | | | | | | |

Db 159 -CCTGGAGCTGTT-----CTGGT-  
CTAGAGTGAATATTCC 191

Qy 258 CAAGGAACAGGAGTTTGCTGCCAGGGCTGCAAAAC-  
AGCTCGAATATCAGCAATTAGAAG 316  
| | | | | | | | | | | | | | | | | | | | | |

Db 192 CAAGG-----TGCT--AAGAGCTGCAGAACAAGCTCATCTTTGGGCAG--  
AACTG 237

Qy 317  
ACGATAAACTTTCTCAGAAATCATCTAGCAGTAACTCTCTCGGTCTCCATTAAAGATTG 376  
| | | | | | | | | | | | | | | | | | | | | |

Db 238 GTGTTTTTGTATGACAAGTATGAAGAATATGATAATGC-  
CATAATTACCATGATGAATCA 296

Qy 377 TCAAA---AAGCCT--  
AAAAGCATGCAGTGCAAAGTGATACTTCTCGATGGATCAGAATA 431  
| | | | | | | | | | | | | | | | | | | | | |

Db 297  
TCCAACTGATGCCTGGAAAGAAGGGCAATTCAAAGATATCATTACCAAGG-----T 347

Qy 432  
TACCTGTGATGTAGAGAAACGCTCCAGAGGACAAGTGCTGTTTGATAAAGTGTGTGAACA 491  
| | | | | | | | | | | | | | | | | | | | | |

Db 348 TGCC---AATGTGGAACATACTACAGAG--CAA-  
TACAGTTCTACTTAGAATTCAAGCC 401

Qy 492  
CTTGAACCTTGCTAGAGAAAGACTACTTTGGGCTTACGTATCGAGATGCTGAAAACCAGAA 551  
| | | | | | | | | | | | | | | | | | | | | |

Db 402 TCTG---TTGTTA-----AATGATTT--GCTGA-----TGGTGCTG-  
TCTCCA--- 438

Qy 552  
GAATTGGTTGGACCCTGCTAAGGAAATAAAAAACAGGTTTGAAGTGGTGCTTGGCACTT 611  
| | | | | | | | | | | | | | | | | | | | | |

Db 439 ----CGGTTGGATCACACTCGTGCAGTCAATTAT----TTCAGCAAGGT--  
TAAACAGCT 488

Qy 612 TTCATTTAATGTGAAATTTTATCCAC-----CAGACCCTGCCCAAC-  
TATCTGAAGA 662  
| | | | | | | | | | | | | | | | | | | | | |

Db 489 ACCACT---  
GGTGAAACCGTATTTGCGTTTCAGTTCAGAACCATAACAACAAATCTGTGAA 545

Qy 663 TATCACCAGGTACTA-  
CCTCTGCTTGCAGTTGCGAGATGACATCGTGTCCGGAAGGCTGC 721



||||  
 Db 546 TGAATCATTGAACAATCTTTTTATTACAGAAG-AAGAT-----TATCAGGCT--  
 CTGC 595

Qy 722 CCTGCTCCTTTGTTACCCTGGCCTTGCTGGGCTCCTACACTGTCCAG-----  
 TCAGAGCT 776

Db 596 GAACATCAATAGATGCTTATGAC-----  
 AACTTTGACAATATCTCGCTTGCTCAGCGTT 649

Qy 777 CGGAGACT-  
 ATGACCCAGATGAATGTGGGAGCGATTACATTAGTGAGTTCCGCTTTGCAC 835

Db 650 TGGAAAACATGAACTCATTGAGTTCAGGAG-----  
 AATTGCTGCTTATCTC 696

Qy 836 --CAAA--  
 CCACACTAAAGAACTGGAAGACAAAGTGATCGAGCTGCACAAGAGCCACAGA 891

Db 697 TTCAAAGGCAACAAT----CGCTGGAA-ACAGAGTG-  
 TAGAGCTGTGCAAGA----- 742

Qy 892 GGAATGACGCCAGCAGAAGCAGAGATGCATTTCTTGAAAATGC-----  
 CAAAAAAT 943

Db 743 -----AAGACAGCCTTTACAAGGATGCAATGC----  
 AGTATGCTTCTGAATCTAAAGAT 792

Qy 944  
 TATCAATGTATGGGGTAGATTTACATCATGCTAAGGACTCAGAAGGGGTAGAAATTATGT 1003

Db 793 ----ACTGAATTGGCT-GAAGAAC-TCCTGCAGTGTTTTTGCA--  
 GGAAGAAAAAAGAG 844

Qy 1004  
 TAGGAGTTTGTGCAAGTGGTCTGTTGATATATCGCGACCGGCTGCGAATAAACAGATTTG 1063

Db 845 AGTGCTTTGGAGC---TTGTCTGTTTACCTGTTACGATC-----  
 TTT 883

Qy 1064  
 CCTGGCCCAAGGTTCTAAAGATTTTATACAAACGGAACAACTTTTACATTAAGATCCGGC 1123

Db 884 TAAGGCC-----AGATGTCGTCC-----  
 TAGAAACTGC 911

Qy 1124  
 CGGGAGAGTTTGAACAATTTGAAAGCACCATTGGGTTTAAGCTGCCAAACCATCGAGCTG 1183

Db 912 ATGGAG-----GCACAATAT-----CA-TGGATTT----  
 TGCCATGCCCTATTTTAT 953

Qy 1184 CCAAGCGTTTATGGAAAGTATG----TGTTGAGCATCATACATTTTTTCAGACT-  
 ACTGTT 1238

Db 954  
 CCAGGTCATGAAGGAGTACTTGACAAAGGTGGATAAATTAGATGCTTCAGAATCACTGAG 1013

Qy 1239 ACCAGAAGC--  
 ACCTCCCAAGAAATTCCTAACCTTGGGTTCCAAGTTTCGTTATAGTGGC 1296

Db 1014 AAAAGAAGAAGAACAAGCTACAGAGACACAACC-----CATTGT----  
 TTATGGT--C 1060

Qy 1297 AGGACACAAG----CGCAAACGAGAAGAGCCAGTGCGTTG--  
 ATAGATCGCCCAGCACCT 1350

Db 1061 AG--CCCCAGTTGATGCTGACAGCAGGACCCAGT--  
 GTTGCCGTCCCTCCCCAGGCACCT 1116

Qy 1351  
 TACTTTGAACGCTCATCCAGCAAACGTTATACCATGTCTCGCAGCTTGGATGGAGCATCA 1410

Db 1117 ---TTTG-----GTTATGGTTATACC--GCACCACCGTATGGAC--  
 AGCCACA 1157

Qy 1411  
 GTGAATGAAAACCATGAAATATACATGAAGGATTCTATGTCTGCTGCAGAGGTTGGTACT 1470

Db 1158 G-----CCTGG-----CTTTG-----  
 GGTAC- 1173

Qy 1471  
 GGCCAGTACGCCACAACAAAAGGCATCTCTCAGACCAACTTGATCACCCTGTGACTCCG 1530

Db 1174 AGCATGTGAGATGAAGC-----GCTGATC-CTG-----  
 TAGTCACCTATTTTCGTACT 1220

Qy 1531  
 GAGAAGAAGGCTGAGGAGGAGCGGGACGAGGAAGAGGACAAACGGAGGAAGGGGAAGAA 1590

Db 1221  
 GAAACATCGTCT----- 1232

Qy 1591  
 GTCACGCCCATCTCGGCCATCCAGCACGAGGGAAAGACTGACAGTGAGCGCACGGACACC 1650

Db 1233 -TTACCCACTTCTCAG---TTTATAATGGGGGAAA-ACAGGCAACGTGTTCTTGTA-  
 ACC 1286

Qy 1651  
 GCAGCCGACGGGGAGACCACTGCCACTGAGGAGCTAGAAAAAACTCAAGATGACCTGATG 1710

Db 1287 TTTATTTTCATGAAGGACTTCT----TTTTGTTTCT-----AACT----ATAAACT--  
 TG 1330

Qy 1711

AAACATCAAACCAACATTAGCGAGCTGAAAAGAACCTTCTTAGAAACCTCAACAGACACT 1770  
| | | | | | | | | | | | | | | | | |  
| | |  
Db 1331 GATC-----ACCTATGTT-----AAAACCTTATT-----  
TCACATTCCACA 1366  
  
Qy 1771 GCCGTAACGAATGAATGGGAGAAGAGGC----TTTCCA-----  
CCTCCCCCGTGC GACT 1820  
| | | | | | | | | | | | | | | | | |  
|  
Db 1367  
TCATTTT TAGAATTTATTTTCGAAGGGGAATAGTTTCAATGTTTTATTCACTTGGGCTTTT 1426  
  
Qy 1821 GGCCGCCAGGCAGGAGGATGCCCC-----CATGATCGAACCACT---TGTCC---  
CTGAA 1869  
| | | | | | | | | | | | | | | | | |  
Db 1427 TTTCTTC-----  
CCCCTCTTTCTTTAAAGAACTGCTCAATATTCAATCTGTT 1473  
  
Qy 1870 GAGAAAATGGAAACCAAGACGGAGTC--  
CAGTGGATAGAGACGGAACCCACCGTGCACCA 1927  
| | | | | | | | | | | | | | | | | |  
|  
Db 1474 GTGAA----GAACCTGATTTGCACTCTGTAGTGTTTAAAGA-----  
AACAAAGAACT 1522  
  
Qy 1928  
CCTGCCGCTTAGCACTGAGAAGGTGGTGCAGGAGACCGTGTGGTGGAGGAGCGGCGTGT 1987  
| | | | | | | | | | | | | | | | | |  
|  
Db 1523 CTAATATTGAATCTCTTA-AATTTAGTGTATGTAAACAGCTT-----  
ACAAATACGTAT 1575  
  
Qy 1988  
GGTGCACGCGAGTGGGGATGCTTCTTACTCGGCGGGAGACAGCGGGGATGCTGCAGCACA 2047  
| | | | | | | | | | | | | | | | | |  
Db 1576 TGT-----CTA-----AATGCATTTAAATCTGTTTTATTCA-  
AAGAAAAGCTAAAGCA-- 1622  
  
Qy 2048  
GCCCCGATTACAGGCATTAAAGGGAAAGAGGGCTCTGCTTGACGGAGGGGGCTAAAGAG 2107  
| | | | | | | | | | | | | | | | | |  
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Db 1623 -----AAAACACTGGCAT-----  
ATGACCATGCAAGACTGTCAGTGCCAACAAA 1666  
  
Qy 2108 GAAGGAGGGGAGGAGGTCGCTAA--  
AGCTGTCCTGGAACAGGAAGAGACAGCCGCTGCTT 2165  
| | | | | | | | | | | | | | | | | |  
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Db 1667 GAC-----AACACTAATCAGC--ACATCGTAC---ACTGGATTGCAG-  
TGCTT 1708  
  
Qy 2166 CCC--  
GTGAGCGACAAGAGGAGCAGAGTGCAGCCATCCACATTTTCAGAACTTTGGAACA 2223  
| | | | | | | | | | | | | | | | | |  
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Db 1709 CCCAGATTATTGAAAAATGTTACAGA---CAACTTGCCTGATTTTTTAAAT-----  
GAGCG 1760

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Qy          2224
AAAAACCTCATTTTGTAGTCCTCAACGGTGAAGACGGAAACCATCAGTTTTTGGCAGTGTTC 2283
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|||||
Db          1761 TAAA-----AGGCCCTC-----TAACC-----TATGCAG-
GTTTC 1789

Qy          2284
ACCGGGAGGAGTAAAGCTAGAAATTTCCACAAGAAGTGCCAGTAGTTTCACACCGAAACCA 2343
      ||  | | | | ||||| | | | | | | | | | | | | | |
Db          1790 CCCATTATGCATA----TAGAAATGCTA-----
GTATGTTTTGCTCAC----- 1829

Qy          2344
AAACCATCACATATGAATCATCACAGGTCGATCCAGGCACAGATCTGGAGCCAGGCGTGC 2403
      ||||| | | ||||| | | | | | | | | | | |
|||||
Db          1830 -----TTCATATG-----TAACAGGT-----GCCCTTAT-----
GTTGTGC 1860

Qy          2404
TGATGAGTGCACAGACGATCACATCTGAAACCACCAGTACCACCACCACACTACCCACATCA 2463
      ||          || ||
Db          1861 TGT-----
ATCCTGT-----G 1871

Qy          2464
CCAAAACCTGTGAAAGGGGGCATTTCAGAGACAAGAATTGAGAAGCGAATAGTCATCACGG 2523
      | |||| | | | | | | | | | | | | | | | |
Db          1872 CTTTTTCTGT----GGGACCATT-----CATTGAGGAGCAAAGAG-
CACCAT-- 1914

Qy          2524
GGGATGCAGACATTGACCATGACCAGGCGCTGGCTCAGGCAATTAAAGAGGCCAAAGAGC 2583
      ||| | | ||| | | | | | | | | | |
Db          1915 --GATTCCAATCTTG----TGT----GTGTTTACTAA--
CCCTT----- 1946

Qy          2584
AGCACCTTGACATGTCAGTGACCAAAGTAGTGGTCCATAAAGAGACAGAGATCACACCAG 2643
      ||||| | | ||| | | | | | | | | | | | |
Db          1947 ----CCCTG--AGGTTTGTG---TATGT--
TGGATATTGTGGTGTTTTAGATCACT---- 1991

Qy          2644
AAGATGGAGAGGATTGACCAGAGGAATAACTTAGCTTGACATGAATGCAGTCATGCAAA 2703
      ||| | | || ||||| | | | | | | | | | | |
Db          1992 -----GAGTGTACAGAAGAGAGAAATT-----
CAACAAAAATATTGCTGTTCTTCA-- 2037

Qy          2704 CCGTTAGGAAAAACCAGAGCCTATATGGAGTTCCCTCTTCTAACCCAACTGTAC---
TTGT 2760
      ||| | | | | | | | | | | | | | | |
|
Db          2038 --GTTTTG-----TTTGTGGAATT---
TGAAATTACTCAAATTTAAAATAAAT 2080

Qy          2761 ATCT-
GTCCGTGGAAAAATTCAGTCCAGAAGAATTGACCTTGACCATTAATAAAGACACT 2819
      || | | |||| |||| | | ||||| | | |||| | ||

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|  
Db 2081 TACTGGACTGTGG-AAATAACA-----TAGAATTGAAGTT-  
TTAATTAAATACCACTCA 2132

Qy 2820 GGCAGAGAGATCTTCCCATAATAAGCAATCT----  
GATTTCAGCATCACTAAACCGATAA 2875  
| | ||| | | | | | | | | | | | |  
Db 2133  
AACGAAAAGAACAGTAGTTTTTGTAGTTTTTATATTGGATACTGAGGCATTAGGGAG---- 2188

Qy 2876  
TGCATGAAGCAACGATAAAAATTACAAAAGAGCAGCATTTTTTAATTTTCACAAAATGTCTC 2935  
|||||| | | ||| | | ||| | | | | | | | |  
Db 2189 -GCATGAAAGGAAGA-  
GGAATGAGGATTGAGACATGTGAAGACATTGTGCATTATATCAA 2246

Qy 2936  
AGTTTTTCAGCTATACCTGCTCGTTCATAACCAACAATATAAACCGTGGTCTCATGTAACA 2995  
| | | | | | | | | | | | | | | | | | | | | |  
||  
Db 2247 TGT-----GC-ATTCCTG-TAGTTCATTAACAA-  
GGTACATGCAATAGTCTAAAGAACCA 2298

Qy 2996  
CATAAACAATTTCATGCCTTTTCATAGTTTATTATTATTAAAGTCTAAACAAAATTGCAATT 3055  
| ||| || | | | ||| ||| ||| ||| ||| |||  
||  
Db 2299 -----GAGTCACTACTATAGTGGCTTAACATTTAATCTGTCT--CCAATATT----  
TT 2345

Qy 3056 TCTTAGGTAAC-CTTATATTTACAATAAATGAAG-  
ATTACCCTCAAATGCTAGAAGCTGT 3113  
| | | | | ||| | | | ||| ||| | | | ||| | |  
|  
Db 2346 AACCAAGTGACACCGGGGTTT----  
TTATCGAAGCATTTCACTTAAATGAACAAA----T 2397

Qy 3114  
CTAGGTCCGTCCGGTGTGTGTCAGATTTCTCAGATTAGATGTGCCAATAACCAAGTTTATT 3173  
| | | | | ||| | ||| | | | | | | | | | |  
Db 2398 CATGG-----C----TGTTATATTAACCTTGAAATA-  
AAATATATTTAAACATGTAAAAA 2446

Qy 3174 CAGTAAA-----  
CAACTTGTACTTGTTCATCTGGTTTATTACTCTCACCCATAAACA 3226  
| ||| | || ||| || | | |||  
||  
Db 2447 AAAAAAAAAAAGGCCACATGTGCTCG----AGCTG-----  
CA 2480

Qy 3227 GTAATGACTCTCTGACCCTCTGG 3249  
| | | | | ||| | |  
Db 2481 GG-----TCGCGG--CCGCTAG 2495

RESULT 10  
US-10-478-914-17  
; Sequence 17, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:

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; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 17
; LENGTH: 2198
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-17
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Query Match          27.2%; Score 5299; DB 1; Length 2198;
Best Local Similarity 42.3%; Pred. No. 0;
Matches 1326; Conservative 0; Mismatches 807; Indels 1004;
Gaps 181;
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Qy          47
CCTGCTGATCCCAGAACAATCAACCATGACGACCGAATCTGGATCAGACTCGGAATCCAA 106
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Db          1 CCTACTGGT-CTTGTGTGG-----GTGTTTTCCAGCAC-GGAAAAG--
TCGAGATAATT 50
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Qy          107 GCC---
GGACCAGGAGGCCGAGCCCCAGGAGGCGGGCGGGGCGCAGGGGCGGCGGGGGGCC 163
      |||      | | ||| |||| || |
||
Db          51 GCCAATGATCAGGGAAACCGAACCACT-----
CC 79
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Qy          164
GTGCCGAGCCGCCCAAGGAGGAGCAGCAGCAGGCCCTGGAGCAGTTCGCCGCCGCTGCA 223
      ||      | ||||      | | | || || | ||| || |
|||
Db          80 AAGCT-ATGTCGCCTT-----TACGGACACT-
GAACGGTTGATCGGTGATGC- 124
```

```
Qy          224
GCGCACAGCACCCCGGTGCGAGGGAGGTCAGTACAAGGAACAGGAGTTTGCTGCCAGGG 283
      |||| || | | | ||| | | | ||| ||      ||| | |||| ||||
Db          125 -CGCAAAGAATCAAGTTGCAATGAACCCCAACCAAC-----ACA-
GTTTTTGATGCC---- 173
```

```
Qy          284
CTGCAAAACAGCTCGAATATCAGCAATTAGAAGACGATAAACTTTCTCAGAAATCATCTA 343
      |||| ||      |||| ||      | |||| | |||
Db          174 -----AAACGTCT-----GATTGGA-----
CGCAGATTTGATGAT 203
```

```
Qy          344 GCAGTAAACTCTCTCGGTCT-
CCATTAAAGATTGTCAAAAAGCCTAAAAGCATGCAGTGC 402
      || ||      | |||| || ||| |||| |      ||| | |
|||
```

[illegible]

|  
Db 619 TCAAGT-----CTACAGCTGGA-  
GACACCCACTTGGGTGGAGAAGATTTT----G 663

Qy 929  
AAAATGCCAAAAAATTATCAATGTATGGGGTAGATTTACATCATGCTAAGGACTCAGAAG 988  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 664 ACAA--CCGAATGGTCAACCATTTTATTGCTGAGTTT-----  
AAGCGCAAGCATAAGAAG 716

Qy 989 GGGTAGAAATTATGTTAGGAGTTTGTGCAAGTGGTCTGTTGATATATCGCGACCG-  
GCTG 1047  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 717 G-----ACATCAGTGAGAA-----CAAGAGAGCTG----  
TAAGACGCCTCCGTACTG 759

Qy 1048 CGAATAAAC-  
AGATTTGCCTGGCCCAAGGTTCTAAAGATTTTATACAAACGGAACAACCTT 1106  
| | | | | | | | | | | | | | | | | | | | | |  
Db 760 CTTGTGAACGTGCTAAGCGT-ACCC-----TCTC-----  
TTCCAGCACCCAGGCCA---- 804

Qy 1107 TTACATTAAGATCCGGCCGGGAGAGTTTGAACAATTTGAAAGCACCATTGGGTT-  
TAAGC 1165  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 805 --GTATTGAGATC-----GATTCT---CTCTATGAAGGAATC---  
GACTTCTATAC 847

Qy 1166 TGCCA-  
AACCATCGAGCTGCCAAGCGTTTATGGAAAGTATGTGTTGAGCATCATACTTT 1224  
| | | | | | | | | | | | | | | | | | | | | |  
Db 848 CTCCATTACC--CG---TGCC---CGATT-----  
TGAAGAACTGAATG----- 882

Qy 1225 TTCAGACTACTGTTACCAGAAGCACC----TCCCA----  
AGAAATTCTTAACCTTGGGTT 1276  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 883 --CTGAC--CTGTT--CCGTGGCACCCTGGACCCAGTAGAGAAAGCCCT----  
TCGAGAT 932

Qy 1277 -  
CCAAGTTTCGTTATAGTGGCAGGACACAAGCGCAAACGAGAAGAGCCAGTGC GTTGATA 1335  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 933 GCCAAACT-----AGACAAGTCACAGATTCAT--GATATTGTCCTG---  
GTTGGTG 978

Qy 1336 GATCGCCCAG---  
CACCTTACTTTGAACGCTCATCCAGCAAACGTTATACCATGTCTCTCGC 1392  
| | | | | | | | | | | | | | | | | | | | | |  
Db 979 GTTCTACTCGTATCCCCAAGATTCAGAAGCTTCTCCA--AGAC-  
TTCTTCAATGGAAG 1035

Qy 1393  
AGCTTGATGGAGCATCAGTGAATGAAAACCATGAAATATACATGAAGGATTCTATGTCT 1452  
| | | | | | | | | | | | | | | | | | | | | |



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Db 1036 AACTGAATAAGAGCATC-----AACCTG-----ATGAAG-----  
CT 1067

Qy 1453  
GCTGCAGAGGTTGGTACTGGCCAGTACGCCACAACAAAAGGCATCTCTCAGACCAACTTG 1512  
| | | | | | | | | | | | | | | | | | | | | |

||||  
Db 1068 GTTGCTTA---TGGTGCAG--CTGTCC-----AGGCA-----  
GCCATCTTG 1103

Qy 1513  
ATCACCCTGTGACTCCGGAGAAGAAGGCTGAGGAGGAGCGGGACGAGGAAGAGGACAAA 1572  
| | | | | | | | | | | | | | | | | | | | | |

Db 1104 -----TCTGGAGAC-AAGTCTGAGAATGTTC-----  
AAGATTTG 1136

Qy 1573  
CGGAGGAAGGGGAAGAAGTCACGCCCATCTCGGCCATCCAGCACGAGGGAAAGACTGAC 1632  
| | | | | | | | | | | | | | | | | | | | | |

Db 1137 CTGCTCTTG-----GATGTCACCTCTTTC--CCTT-----  
GGTAT----- 1171

Qy 1633  
AGTGAGCGCACGGACACCGCAGCCGACGGGGAGACCACTGCCACTGAGGAGCTAGAAAAA 1692  
| | | | | | | | | | | | | | | | | | | | | |

Db 1172 -----TGAAACTGCTG-----GTGGAGTC--  
ATGAC----- 1195

Qy 1693  
ACTCAAGATGACCTGATGAAACATCAAACCAACATTAGCGAGCTGAAAAGAACCTTCTTA 1752  
| | | | | | | | | | | | | | | | | | | | | |

|  
Db 1196 -----TGTCCTCATCAAGCGTAATACCACCATT-----  
CCTACCAA 1231

Qy 1753 GAAACCTCAACAGACACTG-  
CCGTAACGAATGAATGGGAGAAGAGGCTTTCCACCTCCCC 1811  
| | | | | | | | | | | | | | | | | | | | | |

||  
Db 1232 G-----CAGACACAGACCTTCACTACCTATT-----  
CTGACAACCACT 1271

Qy 1812  
CGTGCGACTGGCCGCCAGGCAGGAGGATGCCCCATGATCGAACCCTTGTCCCTGAAGA 1871  
| | | | | | | | | | | | | | | | | | | | | |

Db 1272 GGTGTGCTT---ATTGAGTTTATGAAGGC-----  
GAGCGTGCCA-----T 1309

Qy 1872 GAAAATGGAAACCAAGACGGAGTCCAG--TGGATAGAGACGGAACCCACCGTGC--  
ACCA 1927  
| | | | | | | | | | | | | | | | | | | | | |

|||  
Db 1310 GACAAAGGATAACAA-----CCTGCTTGGCAAGTTT--GAACTCACAG-  
GCATACCT 1358

Qy 1928 CCTGCCGCTTAGCACTGAGAAGGTGGTGC-----  
AGGAGACCGTGTTGGTGGAGGAGCG 1981  
| | | | | | | | | | | | | | | | | | | | | |

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      || ||||| || ||| || | ||| || | | |||
|||
Db      1777 ---CCATCATCACC-AAGCTGTACCAGAGTGCA----GGAGGCATGCCAGGAG----
GAA 1824

Qy      2512
TAGTCATCACGGGGGATGCAGACATTGACCATGACCAGGCGCTGGCTCAGGCAATTAAAG 2571
      | | ||||| || | || | ||
Db      1825 TG-----CCTGGGGGAT-----TT-----
CCTGGTGGTG----- 1848

Qy      2572
AGGCCAAAGAGCAGCACCTGACATGTCAGTGACCAAAGTAGTGGTCCATAAAGAGACAG 2631
      |||| | ||| || | || || | | |
|||
Db      1849 -----GAGCTCCTCCC-----TCTG-----GTGGTGCTTCCT-----
CAG 1878

Qy      2632 AGATCACACCAGAAGATGGAGAGGATTGA-
CCAGAGGAATAACTTAGCTTGACATGAAT 2690
      | | ||||| || | | |||| | || || | || | |||
|
Db      1879 GG--CCCACCA-TTGAAGAGGTTGATTAAGCC-----AACCAAG--
TGTAGATGTA- 1924

Qy      2691 GCAGTCATGCAAACCGTTAGGAAAACCAGAGCCTATATGGAGTTCC-
CTCTTCTAACCCA 2749
      ||| | | || || || |||| | || || | || || | |
|
Db      1925 GCATTGTTCCACACATTT---AAAC-----
ATTTGAAGGACCTAAATTCGTAGCAA 1973

Qy      2750
ACTGTACTTGTATCTGTCCGTGGAAAATTTTCAGTCCAGAAGAATTGACCTTGACCATTAA 2809
      | || |||| |||| | || | || | || |
||
Db      1974 AT-----TCTGTGG-----CAGTTTTAAAAAGTTAAGCTG---
CTATAG 2009

Qy      2810
TAAAGACACTGGCAGAGAGATCTTCCCATAATAAAGCAATCTGATTTCAGCATCACTAAAC 2869
      | ||| |||| |||| || || || || || || ||
Db      2010 T-AAGTTACTGG-----GCATTCT-----
CAATACT---- 2034

Qy      2870
CGATAATGCATGAAGCAACGATAAAATTACAAAAGAGCAGCATTTTTTAATTTTCACAAAA 2929
      || || | | ||| | | || | | | ||
Db      2035 -----TGAAT-ATGGAAC-----
ATATGCACAGGGGAAG----- 2062

Qy      2930 TGTCTCAGTTTTTCAGCTATAACC--
TGCTCGTTCATAACCAACAATATAAACCGTGGTCTC 2987
      | || | || | || || | || || | || || || ||
Db      2063 -----GAAATAACATTGCAC-TTTATAAAC-
ACTGTATTGTAAGTGG---- 2102

Qy      2988 ATGTAACACATAAACAATTC-
ATGCCTTTCATAGTTTATTATTATTAAAGTCTAAACAAA 3046
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|||  
Db 2103 -----AAAATGCAATGTCTTAAAT-----  
AAACTATTTAAA 2134

Qy 3047 ATTGCAATTTCTTAGGTAACCTTATATTTACAATAAATGAAGATTAC---  
CCTCAAATGC 3103  
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|||  
Db 2135 ATT-----  
GGCACCATAAAAAAAAAAAAAAAAAAAAAAGGCCACATGTGC 2182

Qy 3104 TAGAAGCTGTCTAGGTC 3120  
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Db 2183 TCG-AGCTG--CAGGTC 2196

RESULT 11  
US-10-478-914-57/c  
; Sequence 57, Application US/10478914  
; Patent No. 7335755  
; GENERAL INFORMATION:  
; APPLICANT: NAKAGAWARA, AKIRA  
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
; FILE REFERENCE: 7388-80899  
; CURRENT APPLICATION NUMBER: US/10/478,914  
; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 57  
; LENGTH: 2336  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-57

Query Match 27.1%; Score 5270.5; DB 1; Length 2336;  
Best Local Similarity 40.1%; Pred. No. 0;  
Matches 1338; Conservative 0; Mismatches 883; Indels 1117;  
Gaps 181;

Qy 48 CTGCTGATCCCAGAACAATCAACCATGACGACCGAATCTGGATCAG-  
ACTCGGAATCCAA 106  
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|  
Db 2336 CAGCT----CGAGCACATGTGGCCTTTTTTTTTTTTTTTTTTTTGTATTTC----  
TCAGA 2285

Qy 107 GCCGGACCAGGAG-GC--  
CGAGCCCCAGGAGGCGGGGCGCAGGGGCGGCGGGGGCC 163  
|| | ||||| || ||||| | | |

|  
Db 2284 GCTG--CCAGGAGTGCATCGAGCC-----TGTAATTTTC-----  
CT 2252

Qy 164 GTGC-CGGAGCCGCCCAAGGAGGAGCAGCAGCAGGCCCTGGAGCAGTTCGCC---

GCCGC 219  
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| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 2251  
GTTCTCTGAATCCCCCATCTTTCTGCAGCTCCAAGCTTTGTGTCCCACAGCCTGTGACTC 2192

Qy 220 TGCAGCGCACAGCAC-----  
CCCGGTGCGAGGGAGGTCAC TGACAAGGAACAGGAG-T 271  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2191 TG-TGCTAACAAATCGCTATTGTCCAGTG---GGGCGAATGGTGGC-  
TGGAACTAAAGAA 2137

Qy 272 TTGCTGCCAGGGCTGCAAAACAGCTCGA-ATATC-  
AGCAATTAGAAGACGATAAACTTTC 329  
| | | | | | | | | | | | | | | | | | | | | |  
| | | | |  
Db 2136 TTGCTGTCT-GGTTTCTATTCAAATCCAGGTAGCGAGATATATGA-----  
ATGGACTTT- 2084

Qy 330 TCAGAAATCATCTAGCAGTAAAC-TCT-  
CTCGGTCTCCATTAAAGATTGTCAAAAAGCCT 387  
| | | | | | | | | | | | | | | | | | | | | |  
Db 2083 TC--GAATCGTCATGTGAATAACGTCTGCTCGG----CATGAAGG-----  
CTCAGAGC-- 2037

Qy 388 AAAAGCATGCAGTGCAAAGTGATACTTCTCGATGGAT---  
CAGAATATACCTGTGATGTA 444  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 2036 -----CATGCTAGG--AAGGATTA--  
ACTCGTAGGCTGACCACTAACATCCTTTGTGGTA 1986

Qy 445 -----  
GAGAAACGCTCCAGAGGACAAGTGCTGTTTGATAAAGTGTGTGAACACTTGAAC 499  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1985 CGAGGGAGAAACATTCC-----CAAGTATCATTT-----TATTCACACTT-  
AATT 1942

Qy 500 TGCTAGAGAAAGACTAC---TTTGGGCTTACGTATCGAGATGCTGAAAAC-----  
CAGA 550  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1941  
TTCTATCCCATACCCCCAAAATAAGGCTAGCTATTTAATTAGTTGGCCGCTTTTCTCTTA 1882

Qy 551  
AGAATTGGTTGGACCCTGCTAAGGAAATAAAAAACAGGTTCTGAAGTGGTGCTTGGCA-C 609  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1881 ATTTTTAGT--GTTTCTGTTGATAATGTGTGA-----  
GTTTGGGAAAATGCTAAGTAGC 1830

Qy 610 TTTTCATTTAATG---  
TGAAATTTTATCCACCAGACCCTGCCCACTATCTGAAGATATC 666  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 1829 TTTTCACTTAGAACACTGTTATTTTCTCTTTAAAGTTTT--  
CTACCTTACATTTATTATA 1772

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Qy          667 ACCAGGTACTACCTCTGCTTGC--AGTTGCGAGATGACATCGTG-----
ICCGG 713      |   ||   ||   ||   |   ||   ||   ||   |   |   |   |   ||

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Db          1771 GCATAGT--TATCTTT-
ATAGCATAGATGCAGAAAAGTAAGAGAGAGCTTGTTTTTTCAAG 1715

Qy          714 AAGGCTGCCCT----GCTCCTTTGTTACCCTGGCCTTGCTGGG----
CTCCTACACTGTC 765      ||   |   ||||       |   ||||       ||   ||   ||   |||       ||||   |   |

|
Db          1714 AAAACAACCCCTTTAAATACTTT-----
CCAACCCATGAAGGGAAAAATCCTCCTTTTTT 1660

Qy          766
CAGTCAGAGCTCGGAGACTATGACCCAGATGAATGTGGGAGCGATTACATTAGTGAGTTC 825
                |                               ||||   ||   ||           |||   |||   |

||
Db          1659 C-----CCCCAAGTGCAT-----TCTAC-
TTATTACTTTG 1631

Qy          826 CGCTTTGCACCAAA---
CCACACTAAAGAAGTGAAGACAAAGTGATCGAGCTGCACAAG 882
                |   |||   |   ||   ||   |||   |   |   |   |

Db          1630
CATTTTTCTCCCAAAGTCCAAATTTATG----- 1603

Qy          883 AGCCACAGAGGAATGACGCCAG--
CAGAAGCAGAGATGCATTTCTTGGAATAATGCCAAAA 940
                ||   |||   |   ||   |   ||   ||   |   |||   |||||||

|||||
Db          1602 ---CAAAGAAAATAGAAACAAGTTCAAATGCA---ATGCATT-----
AACCAAAT 1559

Qy          941
AATTATCAATGTATGGGGTAGATTTACATCATGCTAAGGACTCAGAAGGGGTAGAAATTA 1000
                ||   |   |||               |   |   |||   ||   |   ||

Db          1558 AA--AACAA-----
GTCTCCTTCAAATTAGGAAC----- 1532

Qy          1001
TGTTAGGAGTTTGTGCAAGTGGTCTGTTGATATATCGCGACCGGCTGCGAATAAACAGAT 1060
                                                |   |||       ||   |   |||

Db          1531 -----CAACC-
TAAGCATTTGTAAAGTG 1510

Qy          1061
TTGCCTGGCCCAAGGTTCTAAAGATTTCATACAAACGGAACAACTTTTACATTAAAGATCC 1120
                |   ||               ||   ||   |||   |||   |   |||       |||   |||   ||

||
Db          1509 TAGC-----AGAATC---AGAATTCTTTTAAA-----
AATTAGATTTGGAACC 1470

Qy          1121
GGCCGGGAGAGTTTGAACAATTTGAAAGCACCATTTGGGTTTAAGCTGCCAAACCATCGAG 1180
                                |||||   ||   |   ||   ||   |||       ||           |||

Db          1469 -----TGAATATAT-AATTTCATAATT-----CT-----
CATTTTT 1440

Qy          1181 CTGCCAAGCGTTTATGGAAAGTATGTGTTGAGCATCATACATTTTTTCAGACTACTGT
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TA 1239  
 ||| ||||| || ||| || ||| |||  
 ||  
 Db 1439 CTG-----TGGAAA-----  
 ATTATTTTATCTTTCTCCTGTATA 1407

Qy 1240 CCAGAAGCACC-TCCCAAGAAAT-----  
 TCCTAACCTTGGGTTCCAAGTTTCGTTATAG 1292  
 || ||| | ||| || | || | ||| |||  
 Db 1406 CCTGAAAAAATGTCCATAGGCTTAAAGGGTCATGCTTTTACATTCC----  
 TTC----- 1358

Qy 1293 TGGCAGGACACAAGCGCAA--  
 ACGAGAAGAGCCAGTGC GTT GATAGATCGCCAGCACCT 1350  
 || |||| | | | | ||| | | |||  
 |  
 Db 1357 ---CATATCACAGGTACTATGAAGTAAGGAGAC-----  
 TTTTAGG-----T 1320

Qy 1351  
 TACTTTGAACGCTCATCCAGCAAACGTTATACCATGTCTCGCAGCTTGGATGGAGCATCA 1410  
 | |||| | || ||| || || ||||| | |||  
 |  
 Db 1319 TTCTTT-----TTGTC-----TTAAAC----TCAGACAGCTTTGT--  
 AAGCAGTA 1281

Qy 1411  
 GTGAATGAAAACCATGAAATATACATGAAGGATTCTATGTCTGCTGCAGAGGTTGGTACT 1470  
 ||| || | |||| || ||| |  
 Db 1280 GTG-----TGTAGATTACAAGA-----  
 GTTAG---- 1259

Qy 1471  
 GGCCAGTACGCCACAACAAAAGGCATCTCTCAGACCAACTTGATCACCCTGTGACTCCG 1530  
 ||||| ||| | |||||  
 |  
 Db 1258 -----ACAAAAG-----CAGGC-----  
 GCGACTGAG 1238

Qy 1531 GAGAAGAAGGCTGAGGAGGAGC--  
 GGGACGAGGAAGAGGACAAACGGAGGAAGGGGAAG 1588  
 || || || | |||| || ||| | || |  
 Db 1237 AAG-AGTTGGTGGGGGAGAAGCTTGGGGC-----  
 ACTTCC----- 1204

Qy 1589 AAGTCACGCCCATCTCGGCCATCCAG--  
 CACGAGGGAAAGACTGACAGTGAGCGCACGGA 1646  
 |||| | || |||| ||| | || | |||  
 Db 1203 -TGTCAC-----TCAACACATTCCAGATCACTAAAAAATTTC-----  
 CACAC--- 1163

Qy 1647  
 CACCGCAGCCGACGGGGAGACCACTGCCACTGAGGAGCTAGAAAAAACTCAAGATGACCT 1706  
 || | || | || |||| |||| ||| |||  
 ||  
 Db 1162 --CCTCTGCATTC-----CCCCTTGCC-----CACTCCAGTT--  
 CCC 1130

Qy 1707  
 GATGAAACATCAAACCAACATTAGCGAGCTGAAAAGAACCTTCTTAGAAACCTCAACAGA 1766

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|||
Db          1129 GGTATTTTCTGATTCCATATGTTGTG-----
GTATTTACCATACTTCTCTCCCTCACTAGG 1074

Qy          1767 CACTGCCGTAACGAATGAATGGGAGAAGAGGCTTTCC----ACCTCCCCCGTGCG--
ACT 1820
      | ||| |   | || ||   | |||   || || ||||   | || |   |||
||
Db          1073 CTCTGGC---
AAGACTGCTTCAGAGGGGATGCATTTCCTTTAGATTGCACAAAGCGGAGCT 1017

Qy          1821
GGCCGCCAGGCAGGAGGATGCCCCCATGATCGAACCACCTTGTCCTTGAAGAGAAAATGGA 1880
      ||   ||| ||   | |   |   |   || ||| |   |   |||
Db          1016 GGGAAAAATGGCTGGCAGTTTC-----
AGAATCTAGTCACGATCGCACGCATGAG 968

Qy          1881
AACCAAGACGGAGTCCAGTGGATAGAGACGGAAACCCACCGTGCACCACCTGCCGCTTAGC 1940
      |||   ||   | ||||   | |   || |||   | || ||   ||||
|
Db          967 CACCTC-ACACA-TCCA-----TGTC----CCTACC---CGCCCC--
CCGCT---C 930

Qy          1941
ACTGAGAAGGTGGTGCAGGAGACCGTGTTGGTGGAGGAGCGGCGTGTGGTGCACGCGAGT 2000
      |   |   || ||   | |||   || | |
Db          929 CC-----
GCCCCTGCAGCTGGCTGACCTG----- 906

Qy          2001
GGGGATGCTTCTTACTCGGCGGGAGACAGCGGGGATGCTGCAGCACAGCCCGCATTACACA 2060
      ||| || |   || || ||   ||   | || ||| | | |
|
Db          905 -----TCTCACCC-----ACTGCTGG---
CCTATCGAACGCCAGGACTGTCT 866

Qy          2061 GGCATTAAAGGGAAAAGAGGGGCTC-TGC--TTGACGGAGG-
GGGCTAAAGAGGAAGGAGGG 2116
      || ||   ||||| |||   ||| |   |   ||||
Db          865 GGTITT-----
GGCTCGTGCCTTTTGTCCATGTCTGGCTT----- 832

Qy          2117
GAGGAGGTCGCTAAAGCTGTCTTGGAACAGGAAGAGACAGCCGCTGCTTCCCGTGAGCGA 2176
      || || ||   |||||   |   ||| ||| |   |||
Db          831 ----AGTTC-CTCT--CTGTC-----TATGCTTGCCTCTAC--
CCCCACCGCCC 792

Qy          2177 CAAGAGGAGC-AGAGTGCAGCCATCCACATTTT-----
AGAAACTTTTGAACAAAAAC 2228
      || | ||   | || ||   ||||   ||||   |   ||||   |||
|||||
Db          791 CAGGCGGCACAAGTGTTTTGCCA--CACAAAAGTATAGATAGAAAAGGTGGT--
AAAAAC 736

Qy          2229
CTCATTTTGTAGTCCCTCAACGGTGAAGACGGAAACCATCAGTTTTTGGCAGTGTTCACCGG 2288
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Db          735 TTCA-----AACTTTTC--TAAATTC----TCCAACAGTT-----
TATTTCT---- 700

Qy          2289
GAGGAGTAAAGCTAGAAATTTCCACAAGAAGTGCCAGTAGTTACACCCGAAACCAAAACC 2348
| | | | |
Db          699 -----TGTGAATTTCTTCC-----
TTCTTTAAATACTCCATTTTAAGAAAACA 657

Qy          2349
ATCACATATGAATCATCACAGGTCGATCCAGGCACAGATCTGGAGCCAGGCGTGCTGATG 2408
| | | | |
Db          656 A--AAAAATTAATTATC-----TAAAGGCAAAGA-ATGGA---AAGCAACCT-
TTG 613

Qy          2409
AGTGCACAGACGATCACATCTGAAACCACCAGTACCACCACCCTACCCACATCACCAA 2468
| | | | |
Db          612 TGTT-----CTTATAATA-----ACTGACTTCATAACTC---
TCTCC--A 577

Qy          2469
ACTGTGAAAGGGGGCATTTCAGAGACAAGAATTGAGAAGCGAATAGTCATCACGGGGGAT 2528
| | | | |
Db          576 GCTGCGTTATGGGATGTGT-----
ATAAAAAAGCTTCTGTTC-----T 540

Qy          2529
GCAGACATTGACCATGACCAGGCGCTGGCTCAGGCAATTAAAGAGGCCAAAGAGCAGCAC 2588
| | | | |
Db          539 GAGAACA-----AAGGAGCACGTGCAG-----AAATGAGACGAAAAA--
ATC-C 499

Qy          2589
CCTGACATGTCAGTGACCAAAGTAGTGGTCCATAAAGAGACAGAGATCACACCAGAAGAT 2648
| | | | |
Db          498 ACTGAC-----AGTATTCCATTA-----
CACA----- 477

Qy          2649
GGAGAGGATTGACCAGAGGAATAACTTAGCTTGCACATGAATGCAGTCATGCAAACCGTT 2708
| | | | |
Db          476 -----AATTACTT-----AAAAGATTTTAGTCAAGC---
CCCT- 447

Qy          2709 AGGAAAACCAGAGCCTATATGGAGTTCCTCTTC-TAACCCAACTGTACTTGTAT---
CT 2764
| | | | |
Db          446 -----
CAACAGATTCAATTTTAAATGGCTTTTAGTTAAAAAAAAAAAAATTGAAAGTGCT 392

Qy          2765 GTCCGTGGAAAATTTTCAGTCCAGAAGAATTGACCTTGACCATTAATAAAGAC-
ACTGGCA 2823

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||
Db          391 TACCCAGTAAA-----AGAACCGAAG--
TAGTCCTGAACTGTTACGTAAGACTTTTTTACA 339

Qy          2824 GAGAGATCTTCCCATAATAAAGCAATCTGATTGAGCATCACTAAACCGAT-
AATGCATGA 2882
| | | | | | | | | | | | | | | |
|
Db          338 GTTGGATCTT--TGTCAAAGGGGATGGGGGT-----
GATGGGAGAAAGC 296

Qy          2883 AGCAACGATAAAATTACAAAAGAGC-
AGCATTTTTTAATTTTCACAAAATGTCTCAGTTTT 2941
| | | | | | | | | | | | | | | |
| | | |
Db          295 AGCAACG--
ACAATCAAAAAGTTCGAGCTGCTGTGGCTAGAGGACAACCTTCTGTGTTTC 238

Qy          2942 CAGCT---
ATACCTGCTCGTTCATAACCAACAATATAAACCGTGGTCTCATGTAACACAT 2998
| | | | | | | | | | | | | | | |
| | | |
Db          237 CAGATAGGATTCTTGCT-GTAGAAATGGAAC--TTCCAGCC-----
AGCACA- 194

Qy          2999 AAACAATTCATGCCTTTTCATAGT----
TTATTATTATTAAAGTCTAAACAAAATTGCAAT 3054
| | | | | | | | | | | | | | | |
| | |
Db          193 -----GCAT-
CCTGTCCCAGTAGAGAAATGAGTTTGTGTCAGTTAAACAAAAAAAAAAT 142

Qy          3055
TTCTTAGGTAACCTTATATTTACAATAAATGAAGATTACCCTCAAATGCTAGAAGCTGTC 3114
| | | | | | | | | | | | | | | |
| |
Db          141 -----TAGATAC-----TGGA----ACCC----
AGGCTAGACGAGGTA 112

Qy          3115
TAGGTCCGTCGGTGTGTCAGATTTCTCAGATTAGATGTGCCAATAACCAAGTTTATTC 3174
| | | | | | | | | | | | | | | |
| |
Db          111 TTGAACCGCGC-----CAGATTTCTT-----TGC----
AGCCCTGTCTGCTC 74

Qy          3175 AGTAAACAACTTGTACTTGTT--
TCATCTGGTTTATTACTCTCACCCATAAACAGTAATG 3232
| | | | | | | | | | | | | | | |
Db          73 AGCTCGCA-----TTCCAGTAGGCCAACAG-----
TGCTCGAGGAATTCCGCAG----- 30

Qy          3233 ACTCTCTGACCCTCTGGAAATATGTAATGCTTCCAATC 3270
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Db          29 -CTTTTAGAGC-----AGAAGTAACACTTCCGTAC 1

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; Sequence 64, Application US/10478914
; Patent No. 7335755
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWARA, AKIRA
; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA
; FILE REFERENCE: 7388-80899
; CURRENT APPLICATION NUMBER: US/10/478,914
; CURRENT FILING DATE: 2003-11-26
; PRIOR APPLICATION NUMBER: PCT/JP02/05294
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-162775
; PRIOR FILING DATE: 2001-05-30
; PRIOR APPLICATION NUMBER: JP 2001-255226
; PRIOR FILING DATE: 2001-08-24
; NUMBER OF SEQ ID NOS: 417
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 64
; LENGTH: 2120
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-478-914-64
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Query Match          26.6%; Score 5184; DB 1; Length 2120;
Best Local Similarity 38.0%; Pred. No. 0;
Matches 1268; Conservative 0; Mismatches 780; Indels 1286;
Gaps 196;
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Qy      14 GCCTAGTCCCCACGCCGCGCGCGCCCGGGCTC-----
CCTGCTGATCCCAACAATC 67
          | | | | | | | | | | | | | | | | | | | | |
Db      2120 GTCTAGCGGCCGCGAC-CTGC-
AGCTCGAGCACATGTGGCCTTTTTTTTTTTTTTTTAA-A 2064
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Qy      68
AACCATGACGACCGAATCTGGATCAGACTCGGAATCCAAGCCGGACCAGGAGGCCGAGCC 127
          | | | | | | | | | | | | | | | | | | | | |
| |
Db      2063 AAGAATGAGTTACATTTATTGATATGTTTGTG---TCATATGCTTTATAAATGGTC--
ACC 2009
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Qy      128 CCAGGAGGCG-----GC-----GGGGGCGCAGGGG-CGG-----
CGGGGGCC 163
          | | | | | | | | | | | | | | | | | | | | |
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Db      2008
CTTTGAAACATGTATTATTACTATTTGGGGGAGAGGGGGACTGTTTATTTACAGGGGAC 1949
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Qy      164
GTGCCGAGCCGCCCAAGGAGGAGCAGCAGCAGGCCCTGGAGCAGTTCGCCGCCGCTGCA 223
          | | | | | | | | | | | | | | | | | | | | |
Db      1948 AAGCAAGACAGGCTCAAGGAGGGAAGGA-CAGGCTC----
AAAGT----- 1908
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Qy      224
GCGCACAGCACCCCGGTGCGAGGGAGGTCACCTGACAAGGAACAGGAGTTTGCTGCCAGGG 283
          | | | | | | | | | | | | | | | | | | | | |
Db      1907 -----CATCACAGTGTGGG-----CTGGAATG---CA-----
GTTGCC---- 1877
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Qy      284
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CTGCAAAACAGCTCGAATATCAGCAATTAGAAGACGATAAACTTTCTCAGAAATCATCTA 343  
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 |||||  
 Db 1876 CTTC-----CT-----  
 TCTTTCTTTTGCACATCTT 1851

Qy 344  
 GCAGTAAACTCTCTCGGTCTCCATTAAAGATTGTCAAAAAGCCTAAAAGCATGCAGTGCA 403  
 | |||| ||  
 Db 1850 CCG-----TCTCTAGG-----  
 GTGAG 1835

Qy 404  
 AAGTGATACTTCTCGATGGATCAGAATATACCTGTGATGTAGAGAAACGCTCCAGAGGAC 463  
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 |||  
 Db 1834 GAGGGGTGC-----AGGCACAG-----GCACCC-  
 AAGAC 1807

Qy 464  
 AAGTGCTGTTTGATAAAGTGTGTGAACACTTGAACCTTGCTAGAGAAAGACTACTTTGGGC 523  
 | ||| || | | | | | |||  
 |  
 Db 1806 AGCTGCGGT-----CCAGCCCCGGCC-----  
 CCACCTGTGGTC 1774

Qy 524  
 TTACGTATCGAGATGCTGAAAACCAGAAGAATTGGTTGGACCCTGCTAAGGAAATAAAAA 583  
 | | | | | |||| | | | |  
 Db 1773 TCA-----GTGACGC-----CCCAGA-----GGCCCCATCT-----  
 TC 1746

Qy 584  
 AACAGGTTCTGAAGTGGTGCTTGGCACTTTTCATTTAATGTGAAATTTTATCCACCAGACC 643  
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 ||  
 Db 1745 CCCA----CATAATGAGGCT--GCTCCATCC-----  
 TCCTCAAAGCC 1710

Qy 644  
 CTGCCCCAATCTCTGAAGATATCACCAGGTACTACCTCTGCTTGCAGTTGCGAGATGACA 703  
 | | | | | || | |||| | |||| | ||  
 |  
 Db 1709 CAGACCTA-TTTCATAAG----CCCCAGACCCACCTTCAC-----  
 CCAGGGCCCC 1664

Qy 704 TCGTGTCGGAAGGCTG----  
 CCCTGCTCCTTTGTTACCCTGGCCTTGCTGGGCTCCTAC 759  
 | | | | | |||| | || || || |||| ||  
 |  
 Db 1663 AAGAGAACAGA--GCTGGAGACACTTCTACT-----CCTAGC---  
 ACTGGATGCCCTC 1616

Qy 760  
 ACTGTCCAGTCAGAGCTCGGAGACTATGACCCAGATGAATGTGGGAGCGATTACATTAGT 819  
 | || |||| || || | |||| |  
 |  
 Db 1615 TC---CC-----CTC-----CTGTGA---AGCTGTAGGTGGGGG-----  
 GTGGA 1583

Qy 820  
GAGTTCCGCTTTGCACCAAACCACACTAAAGAACTGGAAGACAAAGTGATCGAGCTGCAC 879  
| | | | | | | | | | | | | | | | | |  
|  
Db 1582 GGACACCCCTTT-----AAGGCAGGCTC-----  
GGGGGGCTATGAACTC-----C 1543

Qy 880 AAGAGCCACAGAGGAATGACGCCAG-  
CAGAAGCAGAGATGCATTTCTTGAAAATGCCAA 938  
| | | | | | | | | | | | | | | | | |  
| | |  
Db 1542 AAGA-CTCCTG-----GAAGCCAGTAAGAAGTGGGAAGG-----TAGGCACA--  
CCA- 1499

Qy 939  
AAAATTATCAATGTATGGGGTAGATTTACATCATGCTAAGGACTCAGAAGGGGTAGAAAT 998  
| | | | | | | | | | | | | | | | | |  
Db 1498 -----TTTGG-----  
GATTTTTATTTTTTCACTGAGCTAAGAG----- 1467

Qy 999  
TATGTTAGGAGTTTGTGCAAGTGGTCTGTTGATATATCGCGACCGGCTGCGAATAAACAG 1058  
| | | | | | | | | | | | | | | | | |  
| | |  
Db 1466 -----AGGAGATT-----CCAGCTATGGA-  
ATCCAG 1442

Qy 1059  
ATTTGCCTGGCCCAAGGTTCTAAAGATTTATACAAACGGAACAACCTTTTACATTAAGAT 1118  
| | | | | | | | | | | | | | | | | |  
Db 1441 A-----GAGC-----GTTCTACAG-----  
GAACAGAACAGAAATT----- 1412

Qy 1119  
CCGGCCGGGAGAGTTTGAACAATTTGAAAGCACCATTGGGTTTAAGCTGCCAAACCATCG 1178  
| | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | |  
|  
Db 1411 --GGCTGGG-----CCCTGGG-----  
CCCAGAG 1391

Qy 1179  
AGCTGCCAAGCGTTTATGGAAAGTATGTGTTGAGCATCATACATTTTTTCAGACTACTGTT 1238  
| | | | | | | | | | | | | | | | | |  
|  
Db 1390 -GAGGCC-----TGGAGCCGCTTAC--  
TGTTTCAG-----T 1364

Qy 1239  
ACCAGAAGCACCTCCCAAGAAATTCCTAACCTTGGGTTCCAAGTTTCGTTATAGTGGCAG 1298  
| | | | | | | | | | | | | | | | | |  
Db 1363 GCCAG-----CTTC-----  
ATCCTTG----- 1348

Qy 1299  
GACACAAGCGCAAACGAGAAGAGCCAGTGC GTT GATAGATCGCCCAGCACCTTACTTTGA 1358  
| | | | | | | | | | | | | | | | | |  
|  
Db 1347 -----GCACTC-----TGCCT-----CTCACACAGCATC--  
GCTCCG- 1318

Qy 1359 ACGCTCATCCAGCAAACGTTATACCATGTCTCGCAGCT--  
TGGATGGAGCATCAGTGAAT 1416  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1317 --GCTC--CCAGAGCCC-----ACAGTGGC-  
AGCCGCTGGAGGCTGTGGCAGCAGCTGCT 1268

Qy 1417  
GAAAACCATGAAATATACATGAAGGATTCTATGTCTGCTGCAGAGGTTGGTACTGGCCAG 1476  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 1267 G----CCCTGC-----CCAAGGAGGG----ATGTGGGC-----TTGGCTCT-  
GACAG 1230

Qy 1477 TAC--GCCACAA----  
CAAAAGGCATCTCTCAGACCACTTGATCACCCTGTGACTCCG 1530  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1229 TTCAAGCCAGAAAGAGCCTTAGAAGTCATTGAGGAC-----ATTCCCATTTT---  
ACAG 1179

Qy 1531 GAGAAG----AAGGCTGAGGAGGAGC-  
GGGACGAGGAAGAGGACAAACGGAGGAAGGGG 1585  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1178 ATGATGAAATAAGGCTCAGAGAGAGCAGGGGCTTTCAAGAACAATAAAGGTGGA---  
GAC 1122

Qy 1586  
AAGAAGTCACGCCCATCTCGGCCATCCAGCACGAGGGAAAGACTGACAGTGAGCGCACGG 1645  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1121 TGGAACCTCAGGCCT-----CCTGTCTGCT-GAGGG--  
TGTCTGCCCATGCTCTCTC-- 1074

Qy 1646 ACACCGCAGCCGACGGGGAGACCACTGCCACTGAGGAGCTAGAAAAAAGTCA----  
AGAT 1701  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1073 TCAGAGTTTCTGA-GTGGTGGTGTCTG-----GAGGGGCTGG---  
ACACGCAAGGGAGCT 1023

Qy 1702  
GACCTGATGAAACATCAAACCAACATTAGCGAGCTGAAAAGAACCTTCTTAGAAACCTCA 1761  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 1022 GGCCTCGTG-----TGTGTCTGTCTGTGCCGGGATGTG-----TCTGTGG-----  
CT 981

Qy 1762 ACAGACACTG-  
CCGTAACGAATGAATGGGAGAAGAGGCTTTCCACCTCCCCCGTGCGACT 1820  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 980 TCTGTCTCTGAACGTGCC-----AGGGGTTTT--  
GTGTCCTGTGTGTGTCT 937

Qy 1821  
GGCCGCCAGGCAGGAGGATGCCCCATGATCGAACCACTTGTCCTGAAGAGAAAATGGA 1880  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 936 ---CTCT-----GTGGGTGCTCCTGTG-----TGCAG-  
GAACCTGGG 904

Qy 1881 AACCAAGACGGAGTCCAGTGGATAGAGACGGAACCCAC---  
CGTGCACCACCTGCCGCTT 1937  
| | | | | | | | | | | | | | | | | | | | | |  
Db 903 GCCATGGCCAG-----AGAGGGATGGGCCTATTCTACAATCTTGGGAGGCCT-  
CCAC-- 852

Qy 1938  
AGCACTGAGAAGGTGGTGCAGGAGACCGTGTGGTGGAGGAGCGGCGTGTGGTGCACGCG 1997  
| | | | | | | | | | | | | | | | | | | | | |  
Db 851 AG-GCTGAGCTGGTGGGG--AGGGTCC-----TGAAGG-  
GTAGAGTGAAG----- 811

Qy 1998  
AGTGGGGATGCTTCTTACTCGGCGGGAGACAGCGGGGATGCTGCAGCACAGCCCGCATTTC 2057  
| | | | | | | | | | | | | | | | | | | | | |  
Db 810 -ATGGGGA--CT--TACTC-----  
CCAGCGGAGAGGAAGAAAC----- 777

Qy 2058  
ACAGGCATTAAAGGGAAAGAGGGCTCTGCTTGACGGAGGGGGCTAAAGAGGAAGGAGGGG 2117  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 776 -CAG-----AAGATAG---GCTT-----GGGGC-----  
ATGGATGGG 749

Qy 2118 AGGAGGTCGCTAAAGCTGTCCTGGAAC-  
AGGAAGAGACAGCCGCTGCTTCCCGTGAGCGA 2176  
| | | | | | | | | | | | | | | | | | | | | |  
Db 748 -----AAAG--GTCTTGGAAGTAGGATGGGGCAAGGGAAAC-----  
AAAGCCC 708

Qy 2177  
CAAGAGGAGCAGAGTGCAGCCATCCACATTTTCAAGAACTTTGGAACAAAAACCTCATTTC 2236  
| | | | | | | | | | | | | | | | | | | | | |  
Db 707 CAAATGGAGTATGG-----GTCC-----CTGGAA-GTTGACACA-----  
CTCTT--- 670

Qy 2237 GAGTCCTCAACGGTGAAGACGGAACCATCAGTTTTTGGCAGT--  
GTTTCACCGGGAGGAG 2294  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 669 -AGCCCTCA---TGGGGGC-----CCAGCC-----CAGTGGGTAACCCCGGG-  
GAAG 628

Qy 2295 T-----AAAGCTAGAAATTTCCACAAGAAGTGCCAGTAGTTCACACC--  
GAAACCAAAA 2346  
| | | | | | | | | | | | | | | | | | | | | |  
Db 627 TGGTCACATGACGTGACACTTCTCAGCTGATTGCTTG-  
AGATCCCCCAGTGTGGCCTGGG 569

Qy 2347 CCATCACATATGAATCATCACAGG-  
TCGATCCAGGCACAGATCTGGAGCCAGGCGTGCTG 2405  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 568 CTTTGTCTT-TGAGTGAGCCCAGGTTCAAGCCAG-----  
GAAGGCTGGCCAGCTG 520

Qy 2406 -  
ATGAGTGCACAGACGATCACATCTGAAACCACCAGTACCACCACCACTACCCACATCAC 2464

|  
 Db 519 CCCAAGGACTGAGGCCTTCTCCTC---  
 CTCCTCCTCTGTGTCTCTCTCGATCATCTTGGC 463

Qy 2465  
 CAAAACTGTGAAAGGGGGCATTTCAGAGACAAGAATTGAGAAGCGAATAGTCATCACGGG 2524  
 || | ||||| || || ||| |||  
 Db 462 CAGCTC-----CCGGGGCAGCTC-----CA-----  
 CGTCTCCAC--- 434

Qy 2525  
 GGATGCAGACATTGACCATGACCAGGCGCTGGCTCAGGCAATTAAAGAGGCCAAAGAGCA 2584  
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 Db 433 -----CTGCCAT-----CTGGATCTGGCTCT-----  
 CA 411

Qy 2585 GC--  
 ACCCTGACATGTGAGTACCAAAGTAGTGGTCCATAAAGAGACAGAGATCACACCA 2642  
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 Db 410 TCTGTCTCGTTCTTG--GGTAGCC--GGTATTTGTC-----  
 TCGGAAGTGGCTCC- 365

Qy 2643  
 GAAGATGGAGAGGATTGACCAGAGGAATAACTTAGCTTGACATGAATGCAGTCATGCAA 2702  
 | | || || | || || | | || || |  
 ||||  
 Db 364 -----GCAGTGTGGCCCG-----CTCTGCCTTCTCTGTGTGAACT-  
 GTGCAT 323

Qy 2703  
 ACCGTTAGGAAAACCAGAGCCTATATGGAGTTCCCTCTTCTAACCCTGTAATTGTAT 2762  
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 |  
 Db 322 CCC-----GCTCCATCTTCTCTTCCACGAG---  
 TTGCTT 292

Qy 2763  
 CTGTCCGTGGAAAATTTTCAGTCCAGAAGAATTGACCTTGACCATTAATAAAGACACTGGC 2822  
 ||| | | ||| | | || || | || |  
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 Db 291 CTG-----ATAC--TCC-----TCGTACTCTCTCC-----  
 CGGCTCATGC 260

Qy 2823  
 AGAGAGATCTTCCCATATAAAGCAATCTGATTGAGCATCACTAAACCGATAATGCATGA 2882  
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 |  
 Db 259 CCTGAG--CTTCGGCT-----GCCGACTTGTCCTC--CATCTC----CC--  
 TTATCCTCGC 215

Qy 2883  
 AGCAACGATAAAATTACAAAAGAGCAGCATTTTTTAATTTTCACAAAATGTCTCAGTTTTTC 2942  
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 Db 214 CGCCTC-----CCA-----GGC-----TCCCAGTGAGGTTT-----  
 TTC 186



Qy 2943  
 AGCTATACCTGCTCGTTTCATAACCAACAATATAAACCGTGGTCTCATGTAACACATAAAC 3002  
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 Db 185 AGCTG-GCC-GC-----CC-----ACCATGGTCT----TCAC-  
 CATGAAC 153

Qy 3003  
 AATTCATGCCTTTTCATAGTTTATTATTATTATAAGTCTAAACAAAATTGCAATTTCTTAGG 3062  
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 Db 152 -----GCCAT-----GGTCTTCGCCG----  
 GCCGGGGCACCGG 124

Qy 3063  
 TAACCTTATATTTACAATAAATGAAGATTACCCTCAAATGCTAGAAGCTGTCTAGGTCCG 3122  
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 Db 123 GCGCCT-----GCTACCACGC----GCCAGGCACCG----  
 GGCACG 91

Qy 3123  
 TCCGGTGTGTCAGATTTCTCAGATTAGATGTGCCAATAACCAAGTTTATTCAGTAAACA 3182  
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 Db 90 TCCG-----CGCCTACTTCAG-----CACTC-----  
 CAGTAGGCC 61

Qy 3183  
 ACTTGTAATTGTTTCATCTGGTTTATTACTCTCACCCATAAACAGTAATGACTCTCTGAC 3242  
 | ||| ||| ||| ||| ||| ||| ||| ||| |||  
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 Db 60 AACAGTGCTCG-----AGGAATT-----CC----GCAG-----  
 CTTTTAGAG 28

Qy 3243 CCTCTGGAAATATGTAATGCTTCCAATCTTGCTT 3276  
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 Db 27 C-----AGAAGTAACACTTCCGTACAGGCCT 2

RESULT 13  
 US-10-478-914-17/c  
 ; Sequence 17, Application US/10478914  
 ; Patent No. 7335755  
 ; GENERAL INFORMATION:  
 ; APPLICANT: NAKAGAWARA, AKIRA  
 ; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA  
 ; FILE REFERENCE: 7388-80899  
 ; CURRENT APPLICATION NUMBER: US/10/478,914  
 ; CURRENT FILING DATE: 2003-11-26  
 ; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-162775  
 ; PRIOR FILING DATE: 2001-05-30  
 ; PRIOR APPLICATION NUMBER: JP 2001-255226  
 ; PRIOR FILING DATE: 2001-08-24  
 ; NUMBER OF SEQ ID NOS: 417  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 17  
 ; LENGTH: 2198

; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-17

Query Match 26.4%; Score 5132.5; DB 1; Length 2198;  
Best Local Similarity 42.1%; Pred. No. 0;  
Matches 1313; Conservative 0; Mismatches 776; Indels 1033;  
Gaps 184;

Qy 214  
CGCCGCTGCAGCGCACAGCACCCCGGTGCGAGGGAGGTCCTGACAAGGAACAGGAGTTT 273  
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Db 2197 CGAC-CTGCAGCTCG-AGCACAT-----  
GTGGCCTTTTTTTTTTTTTTTTTTTT 2150

Qy 274  
GCTGCCAGGGCTGCAAAACAGCTCGAATATCAGCAATTAGAAGACGATAAACTTTCTCAG 333  
| | || |||| | | | |||  
Db 2149 TTTTATGGTGC-----  
CAATTTTAAATAGTTTATTT----- 2118

Qy 334  
AAATCATCTAGCAGTAAACTCTCTCGGTCTCCATTAAAGATTGTCAAAAAGCCTAAAAGC 393  
|| | || | || | || | || | || | || |  
Db 2117 AAGACA--TTGCATTTTCCACT-----TACAATACAG--  
TGTTTATAA----- 2079

Qy 394 ATGCAGTGCAAAGTGA--  
TACTTCTCGATGGATCAGAATATACCTGTGATGTAGAGAAAC 451  
|||||| | | | |||| | |||| |  
|  
Db 2078 ----AGTGCAATGTTATTTCTTC-----CCCTGTGC-----  
ATAT 2047

Qy 452  
GCTCCAGAGGACAAGTGCTGTTTGATAAAGTGTGTGAACACTTGAAGTTGCTAGAGAAAG 511  
| |||| | |||| | |||| | | | |||| || |  
Db 2046 GTTCCATA-TTCAAGT----ATTGAGAATG-----  
CCCAGTAACTTACTATAGCAGC 2000

Qy 512 ACTACTTTGGGCTTACGTATCGAGATGCTGAAAACCAGAAGAATTGG-----  
TTGGA 563  
|||| | || | || | || | |||| | ||  
|  
Db 1999 TTAAC TTT----TTA-----AAACTG----CCA-  
CAGAATTTGCTACGAATTTAGG 1958

Qy 564 CCCTGCTAAGGAAATAAAAAACAGGTTTGAAGTGGTGCTTGGC-ACTT-  
TTCATTTAAT 621  
|| | || | || | || | || | || | || |  
|  
Db 1957 TCCTTCAAATGTTTTAAAT-----GT-----  
GTGGAACAATGCTACATCTACACTTGGT 1909

Qy 622 GTGAAATTTTATCCACCAGACCCT-----  
GCCCAACTATCTGAAGATATCACCAGGTAC 675  
| || || || | || | || | || | || |  
Db 1908 TGGC---TTAATCAACCTCTTCAATGGTGGGCC-----CTGAGGA-  
AGCACC----- 1866

Qy 676 TACCTCTGCTTGCAGTTTGCAGATGACATCGTGTCCGGAAGGCTGCCCTGC--  
TCCTTTG 733

Db 1865 -ACCAGAGGGAGGAGCTCC-----ACCAC-----  
CAGGAAATCCCCCAGGCATTCCT--- 1820

Qy 734  
TTACCCTGGCCTTGCTGGGCTCCTACACTGTCCAGTCAGAGCTCGGAGACTATGACCCAG 793

Db 1819 ----CCTGG-CATGC----CTCCTGCACT---  
CTGGTACAGCTTGTTGATGATG----- 1778

Qy 794  
ATGAATGTGGGAGCGATTACATTAGTGAGTTCCGCTTTGCACCAAACCACACTAAAGAAC 853

Db 1777 -----GGG-----TTGCA-----AACTTT-  
CTCCAGCTCTTTCTGTTGATG 1743

Qy 854  
TGGAAGACAAAGTGATCGAGCTGCACAAGAGCCACAGAGGAATGACGCCAGCAGAAGCAG 913

Db 1742 T-----TCAAATTCTTC---  
CTTCTCAGCAGTCTGATTCTTATCAAGCCAGTTGAT---- 1695

Qy 914 AGATGCATTTCTTGAAAAATG-  
CCAAAAAATTATCAATGTATGGGGTAGATTTACATCAT 972

Db 1694 -----AATTTTCATTACACTTGTCCAGAATCTT-----  
CTGTTTGTCTCATCGTTAATCTT 1644

Qy 973 GCTAAGGA----CTCA---GAAGGGGTAGAAATTATGTTAGGAGTTTGTG---  
CAAGTGG 1022

Db 1643  
GCCTTGAAGTTTCTCATCTTCAACAGTTGCTTTTCATGTTGAAGGCATAGGACTCAAGTGA 1584

Qy 1023 TCTGTTGATATATCGC---GAC---  
CGGCTGCGAATAAACAGATTG----- 1063

Db 1583 ATTCTTGG-  
ATGACACCTTGTCCCTCTGCTTCTCATCTTCAGCTTTGTACTTCTCAGCTT 1525

Qy 1064 CCTGGCCCA-AGGTTCTAAAGATTTTCAT---  
ACAAACGGAACAACCTTTTACATTAAGATC 1119

Db 1524 CCTGGACCATACGTTT-AATGTCTTCCTTGCTCAAACGGCCC-----  
TTGTCATTA----- 1475

Qy 1120 CGGCCGGGAGAGT-----  
TTGAACAATTGAAAGCACCATTGGGTTTAAGCTGCCAAACCA 1175

Db 1474 -----GTGATAGTAATCTTGTCTCTTTTCCCGTACTCTTG-----  
TCCACAGCAGAGACA 1424

Qy 1176 TCGAG-  
CTGCCAAGCGTTTATGGAAAAGTATGTGTTGAGCATCATACATTTTTTCAGACTAC 1234

|  
 Db 1423 TTGAGTATACCA-----TTGGCATCAATG-----TCAAAAGT-----  
 GACTTC 1386

Qy 1235  
 TGTTACCAGAAGCACCTCCCAAGAAATTCCTAACCTTGGGTTCCAAGTTTCGTTATAGTG 1294  
 | | | | |  
 Db 1385 AAT---CTGAGGAAC-----  
 ACCTCGGGGT----- 1364

Qy 1295  
 GCAGGACACAAGCGCAAACGAGAAGAGCCAGTGC GTTGATAGATCGCCCAGCA----- 1347  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1363 GCAG-----GAGGTATGCCTGTGAGTTCA-  
 AACTTGCCAAGCAGGTTGTT 1320

Qy 1348 --CCTT--ACTTTGAACGCTCATCCAGCAAACGTTATACCATGTCTCGCA-  
 GCTTGATG 1402  
 | | | | | | | | | | | | | | | | | | | | | |

||  
 Db 1319 ATCCTTTGTCATGGCAGCTCG-CCTTCA-----  
 TAAACCTGAATAAGCACACCAGGCTG 1266

Qy 1403  
 GAGCATCAGTGAATGAAACCATGAAATATACATGAAGGATTCTATGTCTGCTGCAGAGG 1462  
 | | | | | | | | | | | | | | | | | | | | | |

||  
 Db 1265 GT-TGTCAGAATAGGTA-----GTGAAGG--TCTGTGTCTGCT----  
 TGG 1228

Qy 1463 TTGGTACTG-GCCAGTACGCC--  
 ACAACAAAAGGCATCTCTCAGACCAACTTGATCACCA 1519  
 | | | | | | | | | | | | | | | | | | | | | |

|  
 Db 1227 TAGGAATGGTGGTATTACGCTTGATGAGGACAGTCATGACTCC-  
 ACCAGCAGTTTCAATA 1169

Qy 1520  
 CTGTGACTCCGGAGAAGAAGGCTGAGGAGGAGCGGGACGAGGAAGAGGACAAACGGAGGA 1579  
 | | | | | | | | | | | | | | | | | | | | | |

Db 1168 C-----CAAGGGA-----AAGAGGAGT-----  
 GACATCC----- 1145

Qy 1580 AGGGGGAAGAAGTCACGCCCA-TCTCGGCC----ATCCAG-CACGAGGGAAAGACT-  
 GAC 1632  
 | | | | | | | | | | | | | | | | | | | | | |

|||  
 Db 1144 AAGAGCAGCAAATCTTGAACATTCTCAGACTTGTCTCCAGACAAGATGG-  
 CTGCCTGGAC 1086

Qy 1633 AGTGAGCGCACGGACACCGCAGC--  
 CGACGGGGAGACCACTGCCACTGAGGAGCTAGAAA 1690  
 | | | | | | | | | | | | | | | | | | | | | |

Db 1085 AGC-TGCAC-CATAAGCAACAGCTTCATCAGGGTTGATGCT-CTTATTCAGTTCT--  
 TTT 1031

Qy 1691  
 AAACCTCAAGATGACCTGATGAAACATCAAACCAACATTAGCGAGCTGAAAAGAACCTTCT 1750  
 | | | | | | | | | | | | | | | | | | | | | |

|  
Db 1030 CCATTGAAGAAGTCTTGGAGAAGCTTCTG---  
AATCTTGGGGATACGAGTAGAACCACC- 975

Qy 1751  
TAGAAACCTCAACAGACACTGCCGTAACGAATGAATGGGAGAAGAGGCTTTCCACCTCCC 1810  
|||| | ||| | | |||||  
Db 974 ----AACC----AGGACAATATC-----  
ATGAAT----- 954

Qy 1811  
CCGTGCGACTGGCCGCCAGGCAGGAGGATGCCCCATGATCGAACCACCTTGTCCTGAAG 1870  
| || |||| | | || || | | |||| || || ||  
Db 953 -C-TGTGACTTGTC-----TAGTTTGGCATC----TCGAAGGGCTT-  
TCTCT---- 914

Qy 1871  
AGAAAATGGAAACCAAGACGGAGTCCAGTGGATAGAGACGGAACCCACCGTGCACCACCT 1930  
|| | |||| | | ||||| | | |  
|  
Db 913 -----ACTGGGTCCAGGG---TGCCACGGAAC-----  
AGGTCAGCAT 880

Qy 1931 GCCGCTTAGCACTGAGAAGGTGGTGCAGGAGACCGTGTTGGTGGAGGAGCGG-  
CGTGTGG 1989  
| | | || | || | | || || | | || | |  
Db 879 TCAGTTCTTCAAATCG-----GGCACGG-----  
GTAATGGAGGTATAGAAGTCGATTCC 831

Qy 1990 TGCA-CGCGAGTGGGGATGCTTCTTACTCGGC--  
GGGAGACAGCGGGGATGCTGCAGCAC 2046  
| || | || | || || || || || | | || | | ||  
Db 830 TTCATAGAGAGAATCGAT-CTCAATACT-GGCCTGGGTGCTGGAAGAGAGGGTAC-  
GCTT 774

Qy 2047  
AGCCCGCATTACAGGCATTAAAGGGAAAGAGGGCTCTGCTTGACGGAGGGGGCTAAAGA 2106  
||| || ||||| || | ||||| | || |  
Db 773 AGCACG--TTCACAAGCAGT-----  
ACGGAGGCGTCTTAC-- 741

Qy 2107 GGAAGGAGGGGAGGAGGTCGCT-----  
AAAGCTGTCCTGGAACAGGAAGAGACAGCCG 2159  
|| || || | | ||||| | | |  
||  
Db 740 -----AGCTCTCTTGTTCCTCACTGATGTCCTTCTTATG-----  
CTTGCG 702

Qy 2160  
CTGCTTCCCGTGAGCGACAAGAGGAGCAGAGTGCAGCCATCCACATTTTCAGAACTTTGG 2219  
|| | | || | || | | || || | | || || ||  
Db 701 CTTAACTC--AGCAATAAAATG-GTTGA-----  
CCATTCGGTTGTCAAAATCTT--- 655

Qy 2220  
AACAAAAACCTCATTTTGTAGTCCTCAACGGTGAAGACGGAACCATCAGTTTTGGCAGTG 2279  
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|  
Db 654 -----CTCCAC-----CCA--AGT-----  
GGG 640

Qy 2280 TTTCACCGG--GAGGAGTAAAGCTAGAAATTTCCACAAGAAGTGC-  
CAGTAGTTCACACC 2336  
| | | | | | | | | | | | | | | | | | | | | |  
Db 639 TGTCTCCAGCTGTAGACTTGACCTCAAAGATTCCA-----  
TCCTCAATAGT----- 594

Qy 2337 GAAACCAAACCATCACATATGAATCATCACAGGTCGATCCAG-  
GCACAGATCTGGAGCC 2395  
| | | | | | | | | | | | | | | | | | | | | |  
Db 593  
GAGGATTGACACATCAAAAGTGCCACCTCCCAGGTCAAAGATGAGCACGTTTCT----- 540

Qy 2396 AGGCGTGCTGATGAGTGCACAGACGATCACATCTGAAACC---  
ACCAGTACCACCACCAC 2452  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 539 -----TTC-----TGCTCCAACCTTTTTGTCT-  
AAGCCGTAAGCAATAGCAGCAGCAG 493

Qy 2453  
TACCCACATCACAAAACCTGTGAAAGGGGGCATTTCAGAGACAAGAATTGAGAAGCGAAT 2512  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 492 TTGGCTCATTAAATAATTCTAAGTA-----CATT---GAGACCAGC-----  
AAT 453

Qy 2513  
AGTCATCACGGGGGATGCAGACATTGACCATGACCAGGCGCTGGCTCAGGCAATTAAAGA 2572  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 452 AGT--TC-----CAGCA-TCTTTG---GTAGCCTGACGCTG-----  
AGA 420

Qy 2573  
GGCCAAAGAGCAGCACCCCTGACATGTCAGTGACCAAAGTAGTGGTCCATAAAGAGACAGA 2632  
| | | | | | | | | | | | | | | | | | | | | |  
| | | |  
Db 419 GTCATTA---AAGTAAGCTGGCA---CTGTGACCACAGCATTGGT-----  
AACAG- 376

Qy 2633  
GATCACACCAGAAGATGGAGAGGATTGACCAGAGGAATAACTTAGCTTGACATGAATGC 2692  
| | | | | | | | | | | | | | | | | | | | | |  
Db 375 --TCTTCCC--AAGGT---AGGCTT---CTGC--AATTTC---  
CTTCATCTT----- 339

Qy 2693 AGTCATGCAAACCGTTAGGAAAACCAGAGCCTATATGGAGTTCCCTCT--  
TCTAACCC-- 2748  
| | | | | | | | | | | | | | | | | | | | | |  
Db 338 TGTCA---GAACCATAGAAGACACCT---  
CCTCTGGATAGAAGCTTTTGGTCTCTCCCTT 285

Qy 2749 -  
AACTGTACTTGTATCTGTCCGTGGAAAATTTAGTCCAGAAGAATTGACCTTGACCATT 2807  
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Db 284 GTATTCTACTTG-----GACCTTGGG-----CCTGCCAGCATCATTACC---  
ACC--- 242

Qy 2808

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AATAAAGACACTGGCAGAGAGATCTTCCCATAATAAAGCAATCTGATTGAGCATCACTAA 2867
      |||||      |||  |      || |  || | |  | |||      |||||
||
Db      241 -ATAAAG-----GGCCAATGTTTCATATCAGACTGGA-CAA-----
CAGCATCATCAA 196

Qy      2868
ACCGATAATGCATGAAGCAACGATAAAATTACAAAAGAGCAGCATTTTTTAATTTTCACAA 2927
      | |      ||| |      | ||      || | |  |||      |||
||
Db      195 ATC-----TGCGT-----CCAAT-----CAGACGTTTGGA-----
TCAAAA 164

Qy      2928
AATGTCTCAGTTTTTCAGCTATACCTGCTCGTTTCATAACCAACAATATAAACCGTGGTCTC 2987
      | ||| | ||      |      |||||  ||||  ||      | ||
||
Db      163 ACTGTGTTGGTG---GG-----GTTTCATTG-
CAACTTGATTCTTTGCGGCATC 120

Qy      2988
ATGTAACACATAAACAATTCATGCCTTTTCATAGTTTATTATTATTAAAGTCTAAACAAAA 3047
      ||      |||  || |||
Db      119 -----ACCGATCA-
ACCGTTCA----- 104

Qy      3048
TTGCAATTTCTTAGGTAACCTTATATTTACAATAAATGAAGATTACCCTCAAATGCTAGA 3107
      || || ||      |||  ||      | |||
|
Db      103 -----GTGTCCGTA-----AAGGCGAC-----
ATAGCTTGG 78

Qy      3108
AGCTGTCTAGGTCCGTCCGGTGTGTGTCAGATTTCTCAGATTAGATGTGCCAATAACCAAG 3167
      || ||      || |||      ||||| | ||| |  || |||| | |
Db      77 AG-TG-----GTTTCGG-----TTTCC-CTGATCA---
TTGGAATTATC--- 44

Qy      3168
TTTATTGAGTAAACAACCTTGACTTGTTTCATCTGGTTTATTACTCTACCCATAAACAG 3227
      | |||| | | ||      ||||  | || | ||| || |
|||
Db      43 -----TCGACTTTTCCGTG-----CTGG---
AAAACACCCACACAAGACCAG 5

Qy      3228 TA 3229
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Db      4 TA 3

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RESULT 14

US-10-478-914-57

; Sequence 57, Application US/10478914

; Patent No. 7335755

; GENERAL INFORMATION:

; APPLICANT: NAKAGAWARA, AKIRA

; TITLE OF INVENTION: NUCLEIC ACIDS ISOLATED IN NEUROBLASTOMA

; FILE REFERENCE: 7388-80899

; CURRENT APPLICATION NUMBER: US/10/478,914

; CURRENT FILING DATE: 2003-11-26  
; PRIOR APPLICATION NUMBER: PCT/JP02/05294  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-162775  
; PRIOR FILING DATE: 2001-05-30  
; PRIOR APPLICATION NUMBER: JP 2001-255226  
; PRIOR FILING DATE: 2001-08-24  
; NUMBER OF SEQ ID NOS: 417  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 57  
; LENGTH: 2336  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-478-914-57

Query Match 26.3%; Score 5110.5; DB 1; Length 2336;  
Best Local Similarity 40.5%; Pred. No. 0;  
Matches 1352; Conservative 0; Mismatches 916; Indels 1067;  
Gaps 197;

Qy 4 GCGCGCCCGAG-----CCTAGTCCCCACGCCGCGGCGCGCC-CGGGCTC-----  
CCTGC 51  
|  
Db 1  
GTACGGAAGTGTTACTTCTGCTCTAAAAGCTGCGGAATTCCTCGAGCACTGTTGGCCTAC 60

Qy 52 TGATCCCAGAAC-AATCAACCATGACGACC---  
GAATCTGGATCAGACTCGGAATCCAAG 107  
|  
Db 61 TGGAAATGCGAGCTGAGCAGACAGGGCTGCAAGGAAATCTGGCGCGGT-TC-  
AATACCTCG 118

Qy 108 CCGGACCAGGAGGCCGAGCCCCAG-----  
GAGGCGGCGGGGGCGCAGGGGCGGCG 157  
|  
Db 119 TCTAGCCTGGGTTCCAGTATCTAATTTTTTTTTTTGTTTTAACTG----  
ACAAACTCATT- 173

Qy 158  
GGGGCCGTGCCGAGCCGCCCAAGGAGGAGCAGCAGCAGGCCCTGGAGCAGTTCGCCGCC 217  
|  
Db 174 ---TCTCTACTGGGACAG-----GATGCTG-TGCTGG--CTGGA--AGTT--  
CCATT 215

Qy 218  
GCTGCAGCGCACAGCACCCCGGTGCGAGGGAGGTCAGTACAAAGGAACAGGAGTTTGCTG 277  
|  
Db 216 TCTACAGC---AAGAATCC-----TATCTGGAAA--  
CACAGAAGTTGTCCT 256

Qy 278 CCAGGGCTGCAAAACAGCTCGAATATCAGCAATTAGAAGACGAT-  
AAACTTTTCTCAGAAA 336  
|  
Db 257 CTA--GC--CACAGCAGCTCGAACTT----  
TTTTGATTGTCGTTGCTGCTTTCTCC---- 304

Qy 337  
TCATCTAGCAGTAAACTCTCTCGGTCTCCATTAAAGATTGTCAAAAAGCCTAAAAGCATG 396



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Db          305 -CATC-----ACCCCC---ATCCCCTT-----
TTGACAAAGATCCAA----- 337

Qy          397
CAGTGCAAAGTGATACTTCTCGATGGATCAGAATATACCTGTGATGTAGAGAAACGCTCC 456
|
|
|
Db          338 CTGTAAAAAGTCTTACGTAAC---AGTTCAGGA-----
CTAC 371

Qy          457
AGAGGACAAGTGCTGTTTGATAAAAGTGTGTGAACACTTGAACCTTGCTAGAGAAAGACTAC 516
|
|
|
Db          372 TTCG-----GTTCTTTT-----ACTGGGTAAGCACTT-----
TCAAT 403

Qy          517
TTTGGGCTTACGTATCGAGATGCTGAAAACCAGAAGAATTGGTTGGACCCTGCTAAGGAA 576
|
|
|
Db          404 TTT----TTTTTTTT-----
AACTAAAAGCC----- 425

Qy          577 ATAAAAAAACAGGTTC-GAAGTGGTGCTTGGCACTTTTTCATTTAATGTGAAATTT-
TATC 634
|
|
|
Db          426 ATTTTAAAATTGAATCTGTTGAGGGGCTTGACTAAAATCTTTTAA---
GTAATTTGTGT- 481

Qy          635
CACCAGACCCTGCCCAACTATCTGAAGATATCACCAGGTACTACCTCTGCTTGCAGTTGC 694
|
|
|
Db          482 -----AATGGAATACTGTCACTGGAT-----TTTTTCGTCT-----
CATTT-- 517

Qy          695 GAGATGACATCGTGTCCGGAAGGCTGCCC-TGCTCCTTTGTTACCCTGGCC--
TTGCTGG 751
|
|
|
Db          518 -----CTGCACGTGCTCCTTTGTT-
CTCAGAACAGAAGCT-- 551

Qy          752
GCTCCTACACTGTCCAGTCAGAGCTCGGAGACTATGACCCAGATGAATGTGGGAGCGATT 811
|
|
|
Db          552 TTTTATACACATCCC-----ATAACGCAGCTG-----
GAGAGAG--- 585

Qy          812
ACATTAGTGAGTTCCGCTTTGCACCAAACCACACTAAAGAACTGGAAGACAAAGTGATCG 871
|
|
|
Db          586 ----TTATGAAGTCAGTTAT-----TATAAGGAAC-----
ACAAAG----- 617

Qy          872
AGCTGCACAAGAGCCACAGAGGAATGACGCCAGCAGAAGCAGAGATGCATTTCTTGAAA 931
|
|
|
Db          618 -GTTGCTTT-----CCA-----TTCTTTGCCTTTAGA-----
TAATTAATTTTTTTTG--- 658

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Qy 932 ATGCCAAAAATTATCAATGTATGG--  
GGTAGATTTACATCATGCTAAGGACTCAGAAGG 989  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 659 TTTTCTTAAATGGAGTATTTAAAGAAGGAAGAAATTCA-CAAGAAATAAACT--  
GTTGG 715

Qy 990 GG----  
TAGAAATTATGTTAGGAGTTTGTGCAAGTGGTCTGTTGATATATCGCGACCGGC 1045  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 716 AGAATTTAGAA---AAGTTTGAAGTTTTTACCA-----  
CCTTTTCTATCTCTAGTTTTG- 766

Qy 1046  
TGCGAATAAACAGATTTGCCTGGCCCAAGGTTCTAAAGATTTTCATACAAACGGAACAAC 1105  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 767 TGTGGCCAAACACTTGTGCC--GCCTGGGGCGGTGGGGGT-----AGAGGCA-  
AGCA 815

Qy 1106 TTTACATTAAGATCC--  
GGCCGGGAGAGTTTGAACAATTTGAAAGCACCATTGGGTTTAA 1163  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 816 TAGACAGAGAGGAACTAAGCCAGAC----ATGGACA-----AAGGCAC----  
GAGCCAAA 862

Qy 1164 GCTGCCAAACCATCGAGCT-  
GCCAAGCGTTTATGGAAAGTATGTGTTGAGCATCATACAT 1222  
| | | | | | | | | | | | | | | | | | | | | |  
| | |  
Db 863 ---ACCAGACAGTC---CTGGCCGTTTCGAT--AGGCCAGCAGTGGGTGAG-----  
ACA- 907

Qy 1223  
TTTTCAGACTACTGTTACCAGAAGCACCTCCCAAGAAATTCCTAACCTTGGGTTCCAAGT 1282  
| | | | | | | | | | | | | | | | | | | | | |  
|  
Db 908 -GGTCAGCCAGCTG----CAGGGGC-----  
GGGAGCGGGGG 938

Qy 1283  
TTCGTTATAGTGGCAGGACACAAGCGCAAACGAGAAGAGCCAGTGC GTT GATAGATCGCC 1342  
| | | | | | | | | | | | | | | | | | | | | |  
Db 939 GGCG----GGTAG--GGACA----TGGATGTGTGAGGTGCTCATGCGT-----  
GCGAT 981

Qy 1343  
CAGCACCTTACTTTGAACGCTCATCCAGCAAACGTTATACCATGTCTCGCAGCTTGGATG 1402  
| | | | | | | | | | | | | | | | | | | | | |  
| |  
Db 982 CGTGA CTAGATTCTGAA---ACTGCCAGC---CATTTTCCCA----GCTCCGCTTTG-  
TG 1030

Qy 1403 GAGCATCAGTGAATGAAAACC--  
ATGAAATATACATGAAGGATTCTATGTCTGCTGCAGA 1460  
| | | | | | | | | | | | | | | | | | | | | |  
| | |

Db 1031 CAATCTAAAGGAATGCATCCCCTCTGAAGCAGTCTTGCCAGAGCCTAG---  
 TGAGGGGAGA 1087  
  
 Qy 1461  
 GTTTGGTACTGGCCAGTACGCCACAACAAAAGGCATCTCTCAGACCAACTTGATCACCAC 1520  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1088 G--AAGTA-TGGTAAATA--CCACAACATATGGAA----  
 TCAGAAAAAT----- 1126  
  
 Qy 1521  
 TGTGACTCCGGAGAAGAAGGCTGAGGAGGAGCGGGACGAGGAAGAGGACAAACGGAGGAA 1580  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1127 -----ACCGG----GAA--CT-----GGAGTGGG-CAAGG----  
 GGAATGCAGAGGGT 1164  
  
 Qy 1581  
 GGGGGAAGAAGTCAACGCCATCTCGGCCATCCAGCACGAGGGAAAGACTGACAGTGAGCG 1640  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1165 GTGGAAA-----TTTTTTAGTGATCTGGAATGTG---  
 TTGAGTGACAGGAAGTG 1210  
  
 Qy 1641 CACGGA-  
 CACCGCAGCCGACGCGGGAGACCACTGCCACTGAGGAGCTAGAAAAAACTCAAG 1699  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1211 CCCCAGCTTCTC--CC-----CCACCAACTCT-----  
 TCTCA-- 1241  
  
 Qy 1700  
 ATGACCTGATGAAACATCAAACCAACATTAGCGAGCTGAAAAGAACCTTCTTAGAAACCT 1759  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1242 -----GTCGCGCCTGCTTTTTGT---CT-----AAC--  
 TCTTGTA---T 1272  
  
 Qy 1760 CAACAGAC-  
 ACTGCCGTAACGAATGAATGGGAGAAGAGGCTTTCCACCTCCCCCGTGCGA 1818  
 | | | | | | | | | | | | | | | | | | | | | |  
 |  
 Db 1273 CTACACACTACTGC--TTACAAA-----GCTGTC-----  
 TGAGT 1304  
  
 Qy 1819  
 CTGGCCGCCAGGCAGGAGGATGCCCCCATGATCGAACCACCTTGTCCCTGAAGAGAAAATG 1878  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1305 TT-----AAGACAAAAAGAAACCTAAAAG-----TCTCCTT---  
 ACTTCATAGTA---- 1346  
  
 Qy 1879 GAAACCAAGACGGAGTCCAGTGGATAGAGACGGAACCCACCGTGCACCA-  
 CCTGCCGCTT 1937  
 | | | | | | | | | | | | | | | | | | | | | |  
 | | |  
 Db 1347 -----CCTGT-GATATGGAAGGAA-----  
 TGTAAGCATGACCTT 1382  
  
 Qy 1938 --  
 AGCACTGAGAAGGTGGTGCAGGAGACCGTGTGGTGGAGAGCGGCGTGTGGTGCACG 1995  
 | | | | | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1383 TAAGC-CTATG-----GACATTTTT-----

TCAGGTATACA 1412

Qy 1996 CGAGTGGGGATGCTTCTTACTCGGCGGGAGACAGCGG-----  
GGATGCTGCAGCACAG-- 2048

Db 1413  
GGAGAAAGATAAAATAATTTTCCACAGAAAAATGAGAATTATGAATTATATAGTTCAGGT 1472

Qy 2049  
CCCGCATTACAGGCATTAAAGGGAAAGAGGGCTCTGCTTGACGGAGGGGGCTAAAGAGG 2108

Db 1473 TCCAAAT---CTAATTTTTTAAAGAATTCTGATTCTGCTACAC-----  
TTTACAAA-- 1520

Qy 2109 AAGGAGGGGAGGAGGTCTGCTAAAGCTG--  
TCCTGGAACAGGAAGAGACAGCCGCTGCTTC 2166

Db 1521 -----TGCTTAGGTTGGTTCCT-AATTTGAAGGAGACT-----  
TGTTTT 1558

Qy 2167 CCGTGAGCGACAAGAGGAGCAGAGTGCAGCCATCCACATTTTC-  
AGAAACTTTGGAACAAA 2225

Db 1559 ATTTG---GTTAA----TGC--  
ATTGCATTTGAAC TTGTTCTATTTTCTTTG----- 1602

Qy 2226  
AACCTCATTTTGAGTCCTCAACGGTGAAGACGGAAACCATCAGTTTTGGCAGTGTTTCAC 2285

Db 1603 --CATAAATTTG-GACTTTG--GGAGAAAAATGCAA-----  
AGTAATAAGTAGAATGCAC 1652

Qy 2286 CGGGAGGAGTAAAGCTAGAAATTTCC--  
ACAAGAAGTGCCAGTAGTTCACACCGAAACCA 2343

Db 1653 TTGGGGGAAAAAAGGAGGATTTTTCCCTTCATGGGTTG-----  
GAAA--- 1694

Qy 2344  
AAACCATCACATATGAATCATCACAGGTCGATCCAGGCACAGATCTGGAGCCAGGCGTGC 2403

Db 1695 -----GTATTTTAAAGGTTGTT-----  
TTCT----- 1716

Qy 2404  
TGATGAGTGACAGACGATCACATCTGAAACCACCAGTACCACCACCACTACCCACATCA 2463

Db 1717 -----TGAAAAACAAGCTC-TCTCTTACTTTCTG---  
CATCTATGCTATAAAGAT-A 1764

Qy 2464 CCAAACTGTGAAAGGGGGCATTTTCAGAGACAAGAATTGAGAAGCGAATAGTCATC-  
ACG 2522

Db 1765 ACTATGCTATAATAAATGTAAGGTAGAAAACTTTAA-  
AGAGAAAATAACAGTGTTCTAAG 1823

Qy 2523  
 GGGGATGCAGACATTGACCATGACCAGGCGCTGGCTCAGGCAATTAAAGAGGCCAAAGAG 2582  
 | | | | | | | | | | | | | | | | | |  
 |||  
 Db 1824 TGAAAAGCT-ACTTAG-CATTTTCC-----CAAAC TCACACATTAT-----  
 CAACAGA- 1869

Qy 2583  
 CAGCACCCCTGACATGTCAGTGACCAAAGTAGTGGTCCATAAAGAGACAGAGATCACACCA 2642  
 | | | | | | | | | | | | | | | | | |  
 ||  
 Db 1870 ---AACACTAAAAATTAAGAGA--AAAGCGG----CCAAC TAATTAAATAG--  
 CTAGCCT 1918

Qy 2643  
 GAAGATGGAGAGGATTGACCAGAGGAATAACTTAGCTTGCACATGAATGCAGTCATGCAA 2702  
 | | | | | | | | | | | | | | | | | |  
 Db 1919 TATTTTGG-GGGTATGGGATAGAAAATTAAGT-----  
 GTGAATAAAATGATAC-- 1965

Qy 2703  
 ACCGTTAGGAAAACCAGAGCCTATATGGAGTTCCCTCTTCTAACCCAACTGTACTTGTAT 2762  
 | | | | | | | | | | | | | | | | | |  
 Db 1966 ----TTGGGA-----ATGTTTCTCCCTCG--  
 TACCACAAAGG----- 1996

Qy 2763 CTGTCCGTGGAAAATTTTCAGTCCAGAAGAATTGA-  
 CCTTGACCATTATAAAGACACTGG 2821  
 | | | | | | | | | | | | | | | | | |  
 Db 1997 ATGTTAGTGG-----TCAG-CCT-ACGAGTTAATCCTT--CCTAGCAT---  
 GGCTCT-- 2041

Qy 2822 CAGAGAGATCTTCCCATAATAAAGCAATC-  
 TGATTTCAGCATCACTAAACCGATAATGCAT 2880  
 | | | | | | | | | | | | | | | | | |  
 |||  
 Db 2042 --GAGCCTTCATGCC-----GAGCAGACGTTATTCA-----  
 CAT 2073

Qy 2881  
 GAAGCAACGATAAAATTACAAAAGAGCAGCATTTTTTAATTTTCACAAAATGTCTCAGTTT 2940  
 | | | | | | | | | | | | | | | | | |  
 |||  
 Db 2074 G-----ACGA-----TTCGAAAAGTC--CATTCATATATCTCGC----  
 TACCTGGATTT 2116

Qy 2941  
 TCAGCTATACCTGCTCGTTTCATAACCAACAATATAAACCGTGGTCTCATGTAACACATAA 3000  
 | | | | | | | | | | | | | | | | | |  
 Db 2117 GAATAGAAACCAG-----ACAGCAAT-----TCTTTAGTT--  
 CCAGCC 2152

Qy 3001  
 ACAATTCATGCCTTTTCATAGTTTATTATTATTAAAGTCTAAACAAAATTGCAATTTCTTA 3060  
 | | | | | | | | | | | | | | | | | |  
 |||  
 Db 2153 ACCATTC--GCC--CCA-----CTGGAC--  
 AATAGCGATTTGTTA 2186

Qy 3061



GGAGCAGTTCGCCGCCGCTGCAGCGCACAGCACCCCGGTGCGAGGGAGGTCAGTCAAG 261  
| | | | | | | | | | | | | | | | | |  
|  
Db 2034 TTTTATTTTGCCTTC-TTGT-----CTGGT-----  
GGTTAGTCTCCTACTAT 1992

Qy 262 GAACAGGAGTTTGCTGCCAGGGCTGCAAAACAGC-  
TCGAATATCAGCAATTAGAAGACGA 320  
| | | | | | | | | | | | | | | | | |  
Db 1991 AAACATGATTTTCCT-----TCTTCCCTTCAGAGTC--CTGTCAATCTTT-----  
ACTT 1945

Qy 321 TAAACTTTCTCAGAAATCATCTAGCAG-  
TAAACTCTCTCGGTCTCCATTAAAGATTGTCA 379  
| | | | | | | | | | | | | | | | | |  
Db 1944 TT---TTTCTCATTAAATATAC-AGAAGTTATACT---ACAG-  
ATACATTCAAGCT----- 1898

Qy 380  
AAAAGCCTAAAAGCATGCAGTGCAAAGTGATACTTCTCGATGGATCAGAATATACCTGTG 439  
| | | | | | | | | | | | | | | | | |  
|  
Db 1897 -----CATG-ACTGCTAA---AAACTTCCTGA-----AATGAGCCT-  
TA 1864

Qy 440  
ATGTAGAGAAACGCTCCAGAGGACAAGTGCTGTTTGATAAAGTGTTGAACACTTGAAC 499  
| | | | | | | | | | | | | | | | | |  
|  
Db 1863 AT-----TCATACGAATCATTTCTATTTGTT-----  
CTTTTTTT 1830

Qy 500  
TGCTAGAGAAAGACTACTTTGGGCTTACGTATCGAGATGCTGAAAACCAGAAGAATTGGT 559  
| | | | | | | | | | | | | | | | | |  
| |  
Db 1829 T--TTGAGACAGACT-----CTTAC-----TCTGTCGCCCA-----  
GGC 1798

Qy 560  
TGGACCCTGCTAAGGAAATAAAAAACAGGTTCGAAGTGGTGCTTGGCACTTTTCATTTA 619  
| | | | | | | | | | | | | | | | | |  
Db 1797 TGGA--GTGCACTGG-----CATGAT-----  
CTCGGCTC----- 1771

Qy 620 ATGTGAAATTTTATCCACCAGACCCTGCCCAACTATCTGAAGATATCACCAGG-  
TACTAC 678  
| | | | | | | | | | | | | | | | | |  
|  
Db 1770 -----ACTGCAACCTCTGCCTCACGAGTT--  
AGGTCAAGCAATTCTTCTGC 1727

Qy 679 CTCTGCTTGCAGTTGCGAGATGACATCGTGTCCGGAAGGCTGCC-  
CTGCTCCTTTGTTAC 737  
| | | | | | | | | | | | | | | | | |  
|  
Db 1726 CTCAGCCTCCCGAGGAGCTAGGATTACAGGTCC-----  
CTGCCACCATGCCTGAGTAAT 1673

Qy 738 CCTGGCCTT-----GCTGGGCTCCTACACTGT---

CCAGTCAGAGCTCGGAGACTA 785  
 | | | | | | | | | | | | | | | | | |  
 Db 1672  
 TTTTGTATTTT TAGTAGAGATGGGGTTTCACCATGTTAGCCAAGCTGGTCTCGAATTC-C 1614

Qy 786 TGACC-CAGATGAATGTGGGAGCGATTACATTAGTGAGTTCCGCTTTGCACC-  
 AAACCAC 843  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 1613 TGACCTCAGGTGA-----TCCGCC---  
 CACCTCAGCCTC 1583

Qy 844  
 ACTAAAGAACTGGAAGACAAAGTGATCGAGCTGCACAAGAGCCACAGAGGAATGACGCCA 903  
 | | | | | | | | | | | | | | | | | |  
 | | |  
 Db 1582 CC-AAAGTGCTGG-----GATTACGGG-----CGTGAGCCACGGT-----  
 GCCT 1545

Qy 904 GCAGAAGCAGAGATGCATTTCTTGAAAA-----  
 TGCCAAAAAATTATCAATGTATGGGG 958  
 | | | | | | | | | | | | | | | | | |  
 Db 1544 G-----GCCTCTATTTTTTATTTTAAATACCTTTTGCCCTGAA---  
 ATCTATGTCC---T 1496

Qy 959 TAGATTTACATCA-  
 TGCTAAGGACTCAGAAGGGGTAGAAATTATGTTAGGAGTTTGTGCA 1017  
 | | | | | | | | | | | | | | | | | |  
 Db 1495 CTGATTATCAACACTGCTTA---CCAG-----TTTTATT-----  
 TTTGT--- 1460

Qy 1018  
 AGTGGTCTGTTGATATATCGCGACCGGCTGCGAATAAACAGATTTGCCTGGCCCAAGGTT 1077  
 | | | | | | | | | | | | | | | | | |  
 |  
 Db 1459 --TGGTATTTATTTTCAATCCCAGC-----TCTACA-  
 ACTTACCAG-----T 1418

Qy 1078  
 CTAAGATTTTCATACAAACGGAACAACCTTTTACATTAAGATCCGGCCGGGAGAGTTTGAA 1137  
 | | | | | | | | | | | | | | | | | |  
 Db 1417 ATAAAAATTT-----GGATCAG---TACTT---AATCTTGC-----  
 AGTTTCTT 1379

Qy 1138  
 CAATTTGAAAGCACCATTGGGTTTAAGCTGCCAAACCATCGAGCTGCCAAGCGTTTATGG 1197  
 | | | | | | | | | | | | | | | | | |  
 Db 1378 CCTTTTAAA-----AATGGAATAATATTATCTATCATATAAAATGCCAG-----  
 TTAA 1330

Qy 1198  
 AAAGTATGTGTTGAGCATCATACATTTTTTCAGACTACTGTTACCAGAAGCACCTCCCAAG 1257  
 | | | | | | | | | | | | | | | | | |  
 | |  
 Db 1329 CAAATATGAACT-  
 AACACCTACAATGTGCCAGGCACCATTCTAGGGAATAGAATGTAAAT 1271

Qy 1258 AAATTCCTAACCTTGGGTTCC-----AAGTTT-  
 CGTTATAGTGGCAGGACACAAGCGCAA 1311  
 | | | | | | | | | | | | | | | | | |



Db 1270 AAGTTCAAGTTCTTG---  
 ACCTGAATAAGTTTACATTTTGTAGTGAGAAGAC----- 1224

Qy 1312  
 ACGAGAAGAGCCAGTGC GTT GATAGATCGCCAGCACCTTACTTTGAACGCTCATCCAGC 1371  
 || || | | || | || | || |

||||  
 Db 1223 -----AGACAATAAATCAATAACATGTCC-----ATTATG-----  
 CCAG- 1190

Qy 1372 AAACGTTATACCATGTCTCGCAG-CTTGATGGAGC-  
 ATCAGTGAATGAAAACCATGAAA 1429  
 | ||| || |||| | || | |||| |||| | || |||

||  
 Db 1189 -ATAGTTTTA-AATGTCACAAAGAAAAAGGGGAGCAATCAGATAGTG-----  
 ATGGAA 1138

Qy 1430  
 TATACATGAAGGATTCTATGTCTGCTGCAGAGGTTGGTACTGGCCAGTACGCCACAACAA 1489  
 |||| | || | |||| | || |||

||  
 Db 1137 GTTACA-----CT-CTAGAGAGGG-----TGGACAG-----  
 AA 1111

Qy 1490  
 AAGGCATCTCTCAGACCAACTTGATCACCCTGTGACTCCGGAGAAGAAGGCTGAGGAGG 1549  
 || | |||| || || || | |||| || |

Db 1110 AAAGTTTCTCTTAGG-----AGATGACATCTG----AACAGAGAT-----  
 CTAA----- 1071

Qy 1550  
 AGCGGGACGAGGAAGAGGACAAACGGAGGAAGGGGGAAGAAGTCACGCCCATCTCGGCCA 1609  
 || | || |||| || ||||

Db 1070 ---ATGAC-----TGAGTACAAAC-----  
 CCCA----- 1051

Qy 1610 TCCAGCACGAGGGAAAGACTGACAGTGAGCGCACGGACACCGCA--  
 GCCGACGGGGAGAC 1667  
 || |||| || | | | | || || || | | | |

||||  
 Db 1050 -----ATGGAAG--TGATTG-  
 GTGTGTTGTGAAACAGCAACACAGCCAGTTTGAC 1002

Qy 1668  
 CACTGCCACTGAGGAGCTAGAAAAAATCAAGATGACCTGATGAAACATCAAACCAACAT 1727  
 | |||| || | || || || | || | |||||

Db 1001 TA-----GATGAGTAGATCAGAATGACTGAGGTGGGACTGTGG--  
 TCATCAA----- 957

Qy 1728  
 TAGCGAGCTGAAAAGAACCTTCTTAGAAACCTCAACAGACACTGCCGTAACGAATGAATG 1787  
 || || | || | | || ||

||  
 Db 956 -AGAGATCAGAGAGGTA-----GCC-----  
 TG 936

Qy 1788  
 GGAGAAGAGGCTTTCCACCTCCCCGTGCGACTGGCCGCCAGGCAGGAGGATGCCCCCAT 1847  
 ||| ||| |||| || | || ||| ||

Db 935 GGA----AGG----CCACATCAC-----

AGAATGTCC---- 912

Qy 1848  
GATCGAACCCTTGTCCCTGAAGAGAAAATGGAAACCAAGACGGAGTCCAGTGGATAGAG 1907  
| | | | | | | | | | | | | | | | | | | |  
Db 911 -TTTGGGCCTC-TGT-----AAGAGCGTTTTGAA---AAAAC--  
AGTTCTGAGCAAAGGT 864

Qy 1908  
ACGGAACCCACCGTGCACCACCTGCCGCTTAGCACTGAGAAGGTGGTGCAGGAGACCGTG 1967  
| | | | | | | | | | | | | | | | | | | |  
Db 863 TAGTCATTTAACTTG-----ACTTACTCTTT-----AGAAG-----  
GATCACT 826

Qy 1968  
TTGGTGGAGGAGCGGCGTGTGGTGCACGCGAGTGGGGATGCTTCTTACTCGGCGGGAGAC 2027  
| | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | |  
Db 825 TTGGCTATTGAGTGGC-----  
AAACAACCTGGAGA- 797

Qy 2028  
AGCGGGGATGCTGCAGCACAGCCCGCATTACAGGCATTAAAGGGAAAGAGGGCTCTGCT 2087  
| | | | | | | | | | | | | | | | | | | |  
Db 796 AGTGG-----TTAGGGGA-----  
GCACTGT- 777

Qy 2088  
TGACGGAGGGGGCTAAAGAGGAAGGAGGGGAGGAGGTCGCTAAAGCTGTCCTGGAACAGG 2147  
| | | | | | | | | | | | | | | | | | | |  
Db 776 -----GGGCAGGAATAGAAGGAG-----AAAAGCAG-  
ACTGGAGCC-- 741

Qy 2148  
AAGAGACAGCCGCTGCTTCCCGTGAGCGACAAGAGGAGCAGAGTGCAGCCATCCACATTT 2207  
| | | | | | | | | | | | | | | | | | | |  
Db 740 -----TAATCCAGTACTTCAGATGA--GAAATGA----CAGATT--  
TGCC----- 704

Qy 2208  
CAGAACTTTTGAACAAAACCTCATTTTGTAGTCCTCAACGGTGAAGACGGAAACCATCA 2267  
| | | | | | | | | | | | | | | | | | | |  
|  
Db 703 -----TGGTACA-----TCATT-----TCCT-----  
ATCCCTTTA 679

Qy 2268  
GTTTTGGCAGTGTTCACCGGGAGGAGTAAAGCTAGAAATTTCCACAAGAAGTGCCAGTA 2327  
| | | | | | | | | | | | | | | | | | | |  
|  
Db 678 CTTATAACT-TATT-----GGTGT-----  
ATTTTTATTTTAAGTGTAATT 639

Qy 2328  
GTTTACACCGAAACCAAAACCATCACATATGAATCATCACAGGTCGATCCAGGCACAGAT 2387  
| | | | | | | | | | | | | | | | | | | |  
| | | | | | | | | | | | | | | | | | | |  
Db 638 TTT-----ATAAATGAAGCATAATTTGAAGAT-----  
TGAT 608

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Qy          2388
CTGGAGCCAGGCGTGCTGATGAGTGCACAGACGATCACATCTGAAACCACCAGTACCACC 2447
      ||      | | | | | | |
|
Db          607 ATGTT--CGGACTTG-TGTT-----TTCTATTATCA-
TGGTGTCT-C 571

Qy          2448
ACCACTACCCACATCACCAAAACTGTGAAAGGGGGCATTTCAGAGACAAGAATTGAGAAG 2507
      ||||      | | | | |      ||| | |      |||| |
Db          570 TCCACATACCTTTTCCCTTTAG-----TTCTGCTTCT--
TATTGTGC-- 531

Qy          2508
CGAATAGTCATCACGGGGGATGCAGACATTGACCATGACCAGGCGCTGGCTCAGGCAATT 2567
      | | ||| |      |      ||| | | | | | | | |
||
Db          530 -----TCCTCAAG-----TCTATTTTTGTCTTTTCC---CTCT-
ACTTCTACTGTT 488

Qy          2568
AAAGAGGCCAAAGAGCAGCACCCCTGACATGTCAGTGACCAAAGTAGTGGTCCATAAAGAG 2627
      ||| ||| ||      || | | | |
|
Db          487 T-----TGAAGTGTATATGC-----TATT--TCTATTT--
TG 460

Qy          2628
ACAGAGATCACACCAGAAGATGGAGAGGATTGACCAGAGGAATAACTTAGCTTGACATG 2687
      ||| | | | |      || || | | | | |
Db          459 CCAGGAGTTACCCC-----CTT---CA----
ATTTTCGTTGTACTCTCT-- 423

Qy          2688
AATGCAGTCATGCAAACCGTTAGGAAAACCAGAGCCTATATGGAGTTCCCTCTTCTAACC 2747
      |||||      |||||      || | | | ||| | |||||
|
Db          422 ----CAGTCT--CAAAC-----ACATACCC---ATG-----
CTCTCTTCTGT-C 389

Qy          2748 CAACTGTACTTGT-
ATCTGTCCGTGGAAAATTTTCACTCCAGAAGAATTGACCTTGACCAT 2806
      | | | | | | | | | | | | | | | | | | |
||
Db          388 CTCTCTTTCATATCATC--TTCTAGAATTAGTTCTACCCCG---ATTTTC--
TACCAAT 337

Qy          2807
TAATAAAGACACTGGCAGAGAGATCTTCCCATAATAAAGCAATCTGATTGAGCATCACTA 2866
      | ||      |||| | | | | | | |
|
Db          336 TTATTTTAT-----TTCCAAT----CAGTACATTGATTGAG-----
ATT 302

Qy          2867
AACCATAATGCATGAAGCAACGATAAAATTACAAAAGAGCAGCATTTTTTAATTTTCACA 2926
      | | | |      ||| | | | | | | | | |
|
Db          301 TATCAAT-----ATGTTTTACCAATTTTAT-----
CATTTTTTTTTGGAGGCT 260

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